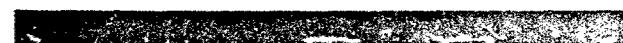


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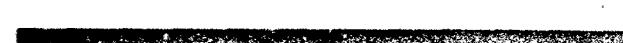
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GENERAL DYNAMICS
Convair Division

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(6)

PROPELLION INTERFACE

AIRBORNE

DIFFICULTIES REVIEW

47

GENERAL DYNAMICS
Convair Division

(18) SAMS-TR-76-179 (19)

Issue Date: 15 Aug 1966

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6 DIFFICULTIES REVIEW ATLAS BOOSTER
AIRBORNE AND GROUND SUPPORT SYSTEMS.

BOOK II.

GENERAL INFORMATION.

Volume XI.

Propulsion Interface Airborne
Difficulties Review.

CONTRACT AF04(695)-71A

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Approved by

J. B. Shaffer

Chief of reliability Engineering

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BOOK II - DIFFICULTIES REVIEW - AIRBORNE CONTAINS THE FOLLOWING VOLUMES

- VOLUME I AIRFRAMES**
- *VOLUME II ABORT SENSING AND IMPLEMENTATION SYSTEM**
- VOLUME III AUTOPILOT**
- *VOLUME IV AUXILIARY POWER SOURCE**
- VOLUME V ELECTRICAL**
- *VOLUME VI GUIDANCE**
- VOLUME VII HYDRAULICS**
- VOLUME VIII INSTRUMENTATION**
- VOLUME IX PNEUMATICS**
- VOLUME X PROPELLANT UTILIZATION**
- VOLUME XI PROPULSION INTERFACE**
- VOLUME XII PROPULSION**
- VOLUME XIII RANGE SAFETY COMMAND**

***VOLUMES II, IV AND VI UNDER ONE COVER.**

GENERAL INFORMATION

The Difficulties Review encompasses problems gathered from the factory, the field, (ETR and WTR) and UTP. The factory difficulties are limited to "selloff" and rerun composite testing.

In the UTP area, the difficulties were excerpted from Central Test Control Reports, Problem Reports, Supplementary History Sheets and Problem Review Reports

Field problems for the Difficulties Review have been limited to captive flights, flight readiness firings, actual countdown dual propellant loading, quad tanking, component reliability testing, and flight acceptance composite tests. Difficulties called out in the search for critical weakness program was not documented.

GSE problems shall be limited to ETR Complex 12, 13, 36A and 36B for the present edition. Hereafter only booster difficulties shall be maintained.

Failure analysis reports cover difficulties from the field and factory and may complement the information above.

The GSE Difficulties Review, Book 1 contains 14 Volumes, one volume for each system under one cover. Each volume is appropriately indexed.

The Airborne Difficulties Review, Book 2 contains 13 volumes. Each volume is under separate cover except Volumes II, IV and VI. Volumes II, IV, and VI are under one cover because of the limited material contained in each volume. All volumes are appropriately indexed.

A guide to facilitate interpretation of data in the Difficulties Review (GSE and Airborne) is part of each book or volume.

DIFFICULTIES REVIEW PROPULSION INTERFACE AIRBORNE

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GENERAL DYNAMICS
Convair Division

Subject: Explanatory Information For Use of Difficulties Review (DR)
Data Tab Runs

This information has been prepared to facilitate use of the DR. It is not intended to describe how the DR was prepared nor the scope of the existing effort.

The Difficulties Review (DR) is presented on a form compatible with automated data processing and printout.

Appearing at the top of the page (outside of blocked-in areas) is the identification of the system and whether it is Airborne or Ground Support Equipment. Appearing with this identification is the date of the document and the page number.

On the right hand side outside of the blocked area, appears the abstract number. An abstract number is assigned to each item of the Difficulty Review to facilitate traceability to the original input document.

Appearing under the major identification are blocks wherein the information on component or system difficulty is identified and explained. Attached are samples of pages coded for reference to the following definitions and explanations:

CODE

EXPLANATION

(1)

This group of blocks callout system, subsystem, test/report number, failed component name, difficulty (Dif) data source, and GDC part number if applicable. Also called out here is the vehicle number, if applicable, and the date of difficulty.

In the same row, the site location, and in case of a flight, captive flight, or countdown, the time will be entered.

The block containing PRI and OTH refer to whether or not the failure is primary or a secondary failure. A secondary failure is to be interpreted as caused by another discrepancy.

The last block in this row is obvious and requires no further explanation:

(2)

Refers to a major system of the launch vehicle.

(3)

Refers to subsystem of a major vehicle system if applicable, (Booster, sustainer, etc).

GENERAL DYNAMICS

Convair Division

<u>CODE</u>	<u>EXPLANATION</u>
(4)	Is a report number as opposed to type of report, (UTP, Countdown, Flight, FAR, etc.).
(5)	Is a type of report, such as a FAR, UTP, FRF, etc.
(6)	Refers to a component part by name.
(7)	Is a component piece part of the component and referred to by name, (plug, seal, wiring, diode, etc., only where applicable).
(8)	Is a GDC part number, if applicable.
(9)	Refers to a site or location at time of discrepancy on the component or vehicle system.
(10)	Is the vehicle on which discrepancy occurred. Vehicle number listed only if unit was installed on a vehicle at time of discrepancy.
(11)	Is the vendor part number, if applicable.
(12)	Is the vendor name, if applicable.
(13)	Is the failure caused by other component or other system. This item defines the failure as secondary or not secondary.
(14)	Refers to the primary failure. If item is labeled <u>no</u> , then item (13) may appear as a <u>yes</u> . Should item (13) appear as a <u>yes</u> , then an abstract will have been written to identify the cause of failure effecting the component referred to in the Difficulty Review, Item 6. It should be noted that a multiple failure may be recorded in these blocks, (yes/yes), or if a failure did not occur, (no/no).
(15)	Defines the failure mode, and if identifiable, the cause is called out. A careful review of the failure mode is made to determine effect on system operation and vehicle effort.

GENERAL DYNAMICS

Convair Division

<u>CODE</u>	<u>EXPLANATION</u>
16	Defines the system effect. This effect is the result of the failure mode assigned to the component.
17	Defines the vehicle effect. This effect is a result of the failure mode and the result of the system effect. It should be noted that corrective action may be taken whether or not the failure was confirmed.
18	Lists the corrective action. Taken by GDC, the vendor, or both.

GENERAL DYNAMICS
CONVAIR DIVISION

17 FEB 1966

PAGE 011

DIFFICULTIES REVIEW-HYDRAULIC SYSTEM-AIRBORNE

STATION	TEST/REPORT NUMBER	DATA SOURCE	VEHICLE	BITE	PRI	VENDOR NAME
	PART NUMBER	PART NUMBER	DATE DIF	TIME DIF	OTH	VENDOR PART NO
14	13	12	11	10	9	8

CORRECTIVE ACTION-DEPT 141-3 TO PERFORM RETEST ON TWO (18) ADDITIONAL UNITS FROM LOT 18, TO DETERMINE LOT ACCEPTABLE LTV AND PROVIDE COMPARISON DATA.

HYDRAULIC-A/B
BOOSTER
HYDRAULIC PUMP
U/P-PAT
87-08160-1

FALURE MODE-OUT OF SPECIFICATION, S/N 408-0830. PEAK TRANSIENT PRESSURES WERE 4100 TO 4600 PSI, ALLOWABLE IS 4000 PSI. P-2407 TO FULL FLOW TIME IS 0.137 SECONDS, ALLOWABLE TIME IS 0.09 SECONDS.

CORRECTIVE ACTION-SUBMIT CCP 7460 TO REVISE TEST REQUIREMENTS TO PRACTICAL LEVELS.

HYDRAULIC-A/B
BOOSTER
HYDRAULIC PUMP/SEAL
BLV-AP-1U-28P
U/P-PAT
87-08160-1

FALURE MODE-LEAK-INTERNAL-CONTINUOUS OIL SEEPAGE WAS OBSERVED DURING CHECKOUT. CAUSED BY DEFECTIVE SEAL AT PUMP PC AND PASSENGER BEARING PORT.

CORRECTIVE ACTION-REVIEWED STOCK OF O-RINGS AND INFORMED THEIR PERSONNEL OF CORRECT SEAL INSTALLATION PROCESS USED.

HYDRAULIC-A/B
BOOSTER
HYDRAULIC PUMP/SEAL
SLV-9D-10-28P
U/P-PAT
87-08160-1

FALURE MODE-LEAK EXTERNAL- PUMP WAS REPORTED LEAKING AFTER HOT FIRING TEST. CARE WAS OVERPRESSURIZED CAUSING DAMAGE TO CASE CONC SEAL.

CORRECTIVE ACTION-NO CORRECTIVE ACTION RECOMMENDED SINCE DAMAGE OCCURRED DUE TO INADEQUATE OVERPRESSURIZATION OF THE PUMP.

HYDRAULIC-A/B
BOOSTER
HYDRAULIC PUMP
68A16-1
U/P-PAT
87-08160-1

FALURE MODE-LEAK INTERNAL- S/N 808-0836 FAILED TO MEET CASE BRAIN LEAKAGE REQUIREMENTS OF 0.0 GPM DURING PAT-1AT. THIS UNIT ALSO FAILED TO MEET PEAK TRANSIENT PRESSURE REQUIREMENTS. REFER TO RPN-4801.
STRETCH SPRINGS-ADME.

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GENERAL DYNAMICS
CONVAIR DIVISION

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PAGE 0006

DIFFICULTIES REVIEW-HYDRAULIC SYSTEM-AIRBORNE

ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
	FAILED COMPONENT NAME	PART NUMBER	DATE DIF	TIME DIF	OTH	VENOR PART NO
CORRECTIVE ACTION - BOOSTER HYDRAULIC FILL AND BLEED PERFORMED.						
HYDRAULIC-A/D BOOSTER						
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. TEST WAS RUN WITHOUT BOOSTER HYDRAULICS BECAUSE BOOSTER HPU COULD NOT BE OPERATED REMOTELY. THIS WAS NOTED DURING AUTOPilot FINAL CHECKS.						
SYSTEM EFFECT-OPERATION DOES NOT START.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-BOOSTER HPU HANIC VALVE, MICROSWITCHES V3 AND V4 ADJUSTED TO MAKE WIPER CONTACT.						
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
FAILURE MODE-LEAK. IN HYDRAULIC ACCUMULATOR PRESSURE EXHIBITED NO PRESSURE DIFFERENCE DURING THE OIL EVACUATION SEQUENCE.						
SYSTEM EFFECT-POSSIBLE CONTAMINATION. ALTHOUGH THE FAILURE MODE INDICATES THE POSSIBILITY OF AIR IN THE BOOSTER HYDRAULIC SYSTEM, SYSTEM PERFORMANCE WAS SATISFACTORY.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE. THE POSSIBILITY OF CONTAMINATION WAS NOT CONFIRMED BY ANY OTHER TELEMETRY DATA.						
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
FAILURE MODE-OUT OF TOLERANCE. BOOSTER HYD ACCUM. PRESS MEASUR. 1330 PSIA. MEASUR HPU INDICATED AN INITIAL NORMAL PRESS. RISE BUT TO A LOWER 13130 PSIA THAN NORMAL (13300 PSIA) AT 2.3 SEC. THE PRESS. THEN DECLINED TO 8720 PSIA DURING NEXT 1.5 SEC. SPECIFIC CAUSE UNKNOWN BUT SYMPTOMATIC OF UNUSUALLY HEAVY DEMAND ON SYSTEM.						
SYSTEM EFFECT-OPERATION TOO LOW. BOOSTER HYDRAULIC PRESS. LOWER THAN NORMAL FOR A TIME PERIOD OF ~8.3 SEC TO 1.5 SEC.						
C. NO ADVERSE EFFECT NOTED ON SYSTEM PERFORMANCE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME
ARTICLE	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PAT	VENOR NAME

16

17

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69/C22R05-015-0A10A7-14-THD-01-71 COMPOSITE-FAD/DPL 7107 2-4 166
69/C22R05-015-0A10A7-14-THD-01-71 COMPOSITE-FAD/DPL 7107 2-4 166
69/C22R05-015-0A10A7-14-THD-01-71 COMPOSITE-FAD/DPL 7107 2-4 166
69/C22R05-015-0A10A7-14-THD-01-71 COMPOSITE-FAD/DPL 7107 2-4 166

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DIRECT CUTTING REVIEWS - INDUSTRIAL SURFACE-ADHESIVE

GENERAL DYNAMICS
CONTRACT DIVISION

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	LV-98-06-1006P V/E PURGE LINE FLARE	FAR 27-20900-308	2880 641030	18/2TR NO	YES NO	
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	69A1041-2 VERNIER PURGE CHECK VALVE	UT-PRT 27-02111-1	60128 NO 903802	FACTORY YES MAROTTA		69A1041-2 VERNIER PURGE CHECK VALVE

Fig. 10. - Failure mode-structural unit rejected for a severed tubing flare; the result of over-torquing the associated b-mu.

CORECTIVE ACTION—APPROPRIATE PERSONNEL WERE MADE AWARE

PROPULSION INTERFACE-AB
 LUBE OIL/PURGE
 601641-2
 VERNIER PURGE CHECK VALVE
 UPA-PAT
 21-0211-1
 040120
 FACTORY YES MAMOTTA
 NO 803002
 002459

DO NOT EXCEED THE MAXIMUM PRESSURE DURING THE FULL FLOW PRESSURE CYCLE. THE MAXIMUM PRESSURE DROP IS 10 PSID FOR A 40 SCFM FLOW AND 68 PSID FOR A 50 SCFM FLOW. ALLOW A 10 MINUTE DELAY OUT OF TOLERANCE. DURING INITIAL PART SATISFACTORY PROOF CYCLE THE FULL FLOW PRESSURE DROP WITH ONE INLET PRESSURE AT 265 PSIA AND AMBIENT TEMPERATURE IS PAID FOR A 40 SCFM FLOW AND 68 PSID FOR A 50 SCFM FLOW. ALLOW A 10 MINUTE DELAY OUT OF TOLERANCE. DURING THE FULL FLOW PRESSURE CYCLE THE MAXIMUM PRESSURE DROP IS 15 PLUS OR MINUS 1 PAID AT 45 MINUS 3 SCFM. REF 800-0003 T.M. NO. 1

CONCLUDING ACTIVITIES

PRODULSION INTERFACE-A38 692434
LUBE OIL/SURFACE 691641
WHEEL PARK CHECK VALVE 690913
UTP-31 87-0211-1

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004206	01/01/2006	INTERAC-4/B	691361	111111-1	8-0202-1	WEH11231 WHEAT OREGON WHEAT	159-PM1	690429	FACTORY 119 MARCHIA	004206	ON 00000000000000000000000000000000
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FAILSAFE MODE-OUT OF TOLERANCE. WITH THE INLET PRESSURIZED TO 283 PSIA AND WITH A 75 PLUS OR MINUS 0.5 PAID DROP ACR SECS. T-HM NO 1. THE SPECIMEN FLOW WAS 10 PLUS OR MINUS 0.5 BCFM GPH. REQUIRED FLOW IS 13.45 PLUS OR MINUS 0.5 SCFM. REP S/N 201-D

MATERIALS

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GENERAL DYNAMICS
CONVAIR DIVISION
MILITARY AIRCRAFT-PRODUCTION INTERFACE SYSTEM-AIRCONE

GENERAL DYNAMICS
CONVAIR DIVISION

19 JUN 1988 DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	SP-80-06-126 CHECK VALVE SEAL-V/E PURGE	FAR 27-02111-1	1100 820404	MTR NO	YES MAROTTA NO	000491

FAILURE MODE-INTERNAL LEAKAGE IN THE REVERSE FLOW DIRECTION. COULD NOT BE CONFIRMED IN FAILURE ANALYSIS. EXTERNAL LEAKAGE WAS EVIDENT AT THE VALVE BODY PARTING SURFACE. WHEN THE JOINT WAS TIGHTENED THE LEAK STOPPED. 3 IDENTICAL CASES REPORTED ON FAR 90-08-146, -204, -234P.

CORRECTIVE ACTION-VENDOR INCORPORATED A TEFLON SEAL BETWEEN THE BODY HALVES.

PROPELLION INTERFACE-A/B LUBE OIL/PURGE	SP-80-06-130 V/E PURGE LINE B-NUT	FAR 27-020900-239	ETR356 NO	YES 60/C NO
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FAILURE MODE-EXTERNAL-UNIT REJECTED FOR EXTERNAL LEAKAGE AT A B NUT. FAILURE CONFIRMED AND ATTRIBUTED TO A CRAZED B NUT CAUSE BY OVERTIGHTING AT INSTALLATION.

CORRECTIVE ACTION-60/C INSPECTION TO FOLLOW TORQUE VALUES IN MPS 2A.19.

PROPELLION INTERFACE-A/B LUBE OIL/PURGE	HP-80-06-111 CHECK VALVE SEAL-V/E ENGINE PURGE	FAR 27-02111-1	ETR 82010	YES MAROTTA NO
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FAILURE MODE- INTERNAL LEAK. ANALYSIS SHOWED PRESENCE OF CONTAMINATION WHICH WAS CONSIDERED TO HAVE CAUSED THE LEAKAGE. IT IS BELIEVED THE CONTAMINATION ORIGINATED IN THE FUEL SYSTEM. 6 IDENTICAL CASES REPORTED ON FAR 90-08-146, -169, -200, -300P.

CORRECTIVE ACTION- ALLOWABLE LEAKAGE RATES WERE REVISED ON DME. 87-02111 PER CIRCLET 37.

PROPELLION INTERFACE-A/B LUBE OIL/PURGE	A-80-06-101 VALVE CHECK, V/E PURGE	FAR 27-02111-1	IP 611214	SYC. NO	YES SOUTHEASTERN NO
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FAILURE MODE-INTERNAL LEAK. UNIT REMOVED FOR INTERNAL LEAKAGE, WHICH WAS CONFIRMED AND CAUSED BY METAL PARTICLES IMBEDDED IN THE KEL-F POPPET SEAL. THE SLIDING SURFACES OF THE POPPET AND VALVE BODY WERE ALSO GALLOPED AND PITTED. THE CONTAMINATION WAS SUSPECTED OF ORIGINATING IN THE GROUND PURGE.

CORRECTIVE ACTION-ECP TUBO INSTALLED CHECK VALVE IN THE VENT PORT OF THE PURGE BOX SOLICID VALVE. CHARGE RELEASED 10-6-82.

GENERAL DYNAMICS
CONVAIR DIVISION

19 JUN 1986

DIFFICULTIES REVIEW-PROPELLSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI	VENOR NAME	CTH VENOR PART NO
PROPELLSION INTERFACE-A/B LUBE OIL/PURGE	HG-88-08-096 VALVE CHECK, V/E PURGE	FAR 27-02111-1	930	EIR	YES	SOUTHEASTERN	400303
<p>FAILURE MODE-LEAK-UNIT REMOVED FOR AN INTERNAL LEAK. LEAKAGE CONFIRMED AND CAUSED BY A PARTICLE OF CONTAMINATION LOCATED BETWEEN THE POPPET AND SEAT. THE PARTICLE WAS 2700X50 MICRONS IN SIZE. MATERIAL ANALYSIS INDICATES IT CAME FROM THE GROUND PURGE BOA.</p>							
<p>CORRECTIVE ACTION-GROUND PURGE SYSTEM REVISED BY ADDING CHECK VALVES TO THE VENT PORTS OF THE PURGE BOX SOLENOID VALVES. THIS WAS EFFECTIVE FOR AMM 12, 13, 14 AND WTR PACL 1 AND 2.</p>							
PROPELLSION INTERFACE-A/B LUBE OIL/PURGE	C-98-08-011F V/E PURGE CHECK VALVE	FAR 27-02111-1	100D	ETR	YES	MAROTTA CO	400163
<p>FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE CAUSED BY CALLING OF THE VALVE GUIDE AND CY. ORDER AS RESULT OF LACK OF LUBRICATION. ADDITIONAL CASES REPORTED IN FAN C1-98-08-012P, -081P.</p>							
<p>CORRECTIVE ACTION-VENDOR TELMINA VALVES WITH DC-111 LUBRICANT.</p>							
PROPELLSION INTERFACE-A/B LUBE OIL/PURGE	H-98-08-089 VALVE CHECK, V/E PURGE	FAR 27-02111-1	6110EC	EIR	YES	SOUTHEASTERN	400407
<p>FAILURE MODE-INTERNAL LEAK. LEAK UNIT WAS REPLACED FOR INTERNAL LEAKAGE DURING A REVERSE FLOW LEAK CHECK, CAUSED BY A BROKEN SPRING DUE TO A MATERIAL FLAW. NO LEAKAGE OCCURRED AFTER A NEW SPRING WAS INSTALLED.</p>							
<p>CORRECTIVE ACTION-VENDOR AGREED TO BRING THE MATERIAL PROBLEM TO THE ATTENTION OF THE SPRING VENDOR.</p>							
PROPELLSION INTERFACE-A/B LUBE OIL/PURGE	AJ-98-08-087 W/LVE, CHECK V/E PURGE	FAR 27-02111-1	6110E8	ETR	YES	SOUTHEASTERN	400270
<p>FAILURE MODE-LEAK. VALVE WAS REMOVED DUE TO INTERNAL LEAKAGE DURING REVERSE FLOW LEAK CHECK. EXAMINATION REVEALED CONTAMINATION OF THE POPPET SEAT. AFTER CLEANING THE VALVE DID NOT LEAK. CONCLUSION-LEAKAGE DUE TO CONTAMINATION OF UNKNOWN DETERMINED ORIGIN.</p>							
<p>CORRECTIVE ACTION-SITE NOTIFIED, RECOMMENDING SYSTEM BE CHECKED FOR CONTAMINATION. THIS WAS DONE.</p>							

SEMINAL DYNAMICS CONVERSATION DIVISION

OFFICUTS REVIEW-PROUL SIGN INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	SLV-90-10-284-F CHECK VALVE SCREW, VERNIER ENGINE 27-02111-1 FUEL PURGE	PAR CHECK VALVE SCREW, VERNIER ENGINE F 27-02111-1 FUEL PURGE	43D 600219	ETR	YES	SOUTHWESTERN V NO A. CORP
FAILURE MODE-INTERNAL LEAK- LEAKED IN THE CHECK DIRECTION DUE TO POPPET SEAT RETAINING SCREW BEING LOOSE WHICH DESTROYED THE SEAL BETWEEN THE SEAT AND THE POPPET BODY.						
CORRECTIVE ACTION-PRIOR TO THIS INCIDENT THE VENDOR HAD INCREASED THE DEPTH OF THE SCREW SLOT TO IMPROVE THE ABILITY TO APPLY ADEQUATE TORQUE TO THE SCREW.						
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	9B-08-042 CHECK VALV SCREW, VERNIER ENGINE F 27-02111-1 UEL PURGE	PAR CHECK VALV SCREW, VERNIER ENGINE F 27-02111-1 UEL PURGE	43D 600219	ETR	YES	SOUTHWESTERN V NO A. CORP
FAILURE MODE-INTERNAL LEAK - VALVE LEAKED IN THE CHECK DIRECTION DUE TO POPPET SEAT RETAINING SCREW BEING LOOSE WHICH DESTROYED THE SEAL BETWEEN THE SEAT AND THE POPPET BODY.						
CORRECTIVE ACTION-PRIOR TO THIS INCIDENT THE VENDOR HAD INCREASED THE DEPTH OF THE SCREW SLOT TO IMPROVE THE ABILITY TO APPLY ADEQUATE TORQUE TO THE SCREW.						
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	86-08-042 CHECKVALVE, VERNIERENS INPURGE, Popp 27-02111-1 ET	PAR CHECKVALVE, VERNIERENS INPURGE, Popp 27-02111-1 ET	591822	SYCAMORE	YES	SOUTHWESTERN V A. CORP
FAILURE MODE-CONTAMINATION- ALL VALVES, S/N 134, 141, 161, 156, 126 AND 204 WERE FOUND TO LEAK DURING CHECK. 110R 1 O NORMAL PURGE CHECKOUT. FOUR VALVES WERE FROM SYCAMORE AND TWO FROM AMR. EACH VALVE POPPET SEAT CONTAINED IMBEDDED METAL PARTICLES. CONTAMINATION OCCURS WHEN THE SYSTEM IS OPENED FOR PURGE ORIFICE CALIBRATION OR OTHER REASON. ALL B ASES, EXCEPT SYCAMORE, HAVE ABANDONED THE CALIBRATION PROCEDURE. AMR VALVES FAILED AFTER SYSTEM WAS OPENED FOR ANOT HER REASON						
CORRECTIVE ACTION-ALL BASES NOTIFIED OF PROBLEM. BACK FLOW LEAK CHECKS ARE MADE PRIOR TO TAKING ELIMINATING THE PO SSIBILITY OF A LEAKY VALVE DUE TO CONTAMINATION						
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	88-08-042 CHECK VALVE SEAL, VERNIER ENGINE P 27-02111-1 URE	PAR CHECK VALVE SEAL, VERNIER ENGINE P 27-02111-1 URE	591822	ETR	YES	SOUTHWESTERN V NO A. CORP
FAILURE MODE-CONTAMINATION- ALL VALVES S/N 134, 141, 161, 156, 126 AND 204 WERE FOUND TO LEAK DURING CHECK PRIOR TO NORMAL PURGE CHECKOUT. FOUR VALVES WERE FROM SYCAMORE AND TWO FROM AMR. EACH VALVE POPPET SEAT CONTAINED IMBEDDED M ETAL PARTICLES. CONTAMINATION OCCURS WHEN THE SYSTEM IS OPEN FOR PURGE ORIFICE CALIBRATION OR OTHER REASON. ALL BASE S, EXCEPT SYCAMORE, HAVE ABANDONED THE CALIBRATION PROCEDURE. AMR VALVES FAIL AFTER SYSTEM WAS OPENED FOR ANOTHER RE ASON.						

15 JUN 1986

GENERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW-PROPELSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME.	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH VENDOR PART NO
080870					
CORRECTIVE ACTION-ALL BASES NOTIFIED OF PROBLEM. BACK FLOW LEAK CHECKS ARE MADE PRIOR TO TANKING, ELIMINATING THE POSSIBILITY OF A LEAKY VALVE DUE TO CONTAMINATION.					
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	86-08-041 CHECK VALVE, POPPET, VERNIER PURGE 27-02111-1	FAR 561118	240 SYCAMORE YES SOUTHWESTERN V NO A. CORP		
FAILURE MODE-INTERNAL LEAK, LEAKAGE CHECK PRIOR TO INSTALLATION ON 240 SHOED GAS LEAKAGE DUE TO A POROUS PLASTIC POPPET.					
CORRECTIVE ACTION-PLASTIC POPPETS WERE REPLACED BY STAINLESS STEEL POPPETS HAVING KEL-F SEALS.					
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	90-08-037 PURGE LINE, BOOSTER ENGINE FUEL JA 27-02000-8 CKE13.	FAR 580818	80 WTR	YES CONVAIR NO	
FAILURE MODE-STRUCTURAL 1-1/2 INCH ALUMINUM TUBING BURST WHILE USED WITH WATER INSTEAD OF LITHIUM CHLORIDE, BURSTING CAUSED BY WATER FREEZING, AND CONSEQUENT EXPANSION, DUE TO PROXIMITY TO LOW TEMP. FROM SUBCOOLING THE HELIUM BOTTLES WITH LN2 OR LOX IN THE ENGINE DUCTS.					
CORRECTIVE ACTION-400 AND ON WILL NOT CONTAIN THIS SECTION OF TUBING, BY DELETION OF THE INERT FLUID FILL REQUIREMENT. TESTS CONDUCTED TO DETERMINE INTERIM ACTION PRIOR TO 400.					
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	0A48/81-1BN-02-08	COMPOSITE-PRD/DPL 580702	80 576-A-2	NO NO	
FAILURE MODE-FAILED TO CEASE OPERATION AT PRESCRIBED TIME. RECEIVED CONTINUOUS PURGE TO ENGINES BECAUSE OF PURGE BY STEM FAILURE.					
SYSTEM EFFECT-NONE.					
VEHICLE EFFECT-NONE.					
CORRECTIVE ACTION-UNKNOWN.					
PROPELLION INTERFACE-A/B LUBE OIL/PURGE	86-08-028 CHECK VALVE SCREW	FAR 27-02111-1		580507 SYCAMORE YES SOUTHWESTERN V NO A. CORP	
FAILURE MODE-INTERNAL LEAK- VALVES S/N 100, 150, 103 AND 102 REJECTED FOR LEAKAGE. S/N 170 AND 150 LEAKED BECAUSE OF INADEQUATE OF A ROUND HEAD SCREW AND THE POPPET SEAT. S/N 102 AND 103 LEAKED BECAUSE OF POROSITY OF PLASTIC POPE					
T BODY.					

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966 DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PHI OTM	VENDOR NAME VENDOR PART NO
						0000001
	CORRECTIVE ACTION-RECOMMENDED REDESIGN TO ELIMINATE INTERFERENCE OF SCREW HEAD AND POPPET SEAT, AND DISCONTINUE USE OF PLASTIC BODY POPPET. ACTION WAS INITIATED BY CONVAIR TO REJECT ALL SUCH ABOVE VALVES AND REPLACE THEM WITH VALVE 9 INCORPORATING RECOMMENDED CHANGES. PLASTIC POPPETS REPLACED BY STAINLESS STEEL POPPETS HAVING KEL-F SEALS.					
PROPELLION INTERFACE-A/B	EN-771/31-102-A2-09 PURGE SOLENOID VALVE	CAPTIVE 9A 371121	3-1/SYC NO	9A 571121	YES NO	0000001
	FAILURE MODE-LEAK-EXTERNAL. FUEL LEAK FROM VENT PORT OF VERNIER ENGINE FUEL PURGE SOLENOID ON THE ENGINE HELIUM PURGE MANIFOLD. SOLENOID VALVE FAILED DUE TO BRONZE CHIP ON VALVE SEAT. CONTAMINATION BELIEVED TO HAVE ORIGINATED FROM THE END OF THE CHAMBER IN THE MANIFOLD.					
	SYSTEM EFFECT-CONTAMINATION-LOX SIDE OF VERNIER ENGINE WOULD BE CONTAMINATED WITH FUEL IF AN ABORT OCCURRED. AT SEC 2ND ATTEMPT OF LAUNCH AN EXPLOSION IN VERNIER ENGINE WOULD RESULT.					
	VEHICLE EFFECT-Possible FIRE AND LOSS OF MISSILE.					
	CORRECTIVE ACTION-SOLENOID VALVE REPLACED.					
PROPELLION INTERFACE-A/B	9B-06-074 TUBE ASSEMBLY-PROPULSION CONTROL S 27-20400-123 PNEUMATIC SYSTEM	FAR 870710	1110	ETR	YES CONVAIR NO	0000335
	FAILURE MODE-OUT OF TOLERANCE. TUBE WAS CROSS CONNECTED. IT WAS CONNECTED TO THE NORMALLY OPEN PORT INSTEAD OF THE NORMALLY CLOSED PORT OF THE PNEUMATIC MANIFOLD. THE DISCREPANCY WAS NOTED AND CORRECTED BEFORE ANY FAILURE OCCURRED.					
	CORRECTIVE ACTION-ALL D VEHICLES IN FINAL ASSEMBLY AND CHECKOUT WERE INSPECTED FOR CONFORMANCE TO BLUE PRINT COPY 9B-06-074 AND INFECTIOUS PERSONNEL WERE CAUTIOUS AND NOTED ADDED TO PLANNING CARDS. A CRITICISM AND DIFFICULTIES REPORT NO. 9628 WAS FORWARDED TO ENGINEERING REQUESTING A FIX TO ELIMINATE THE POSSIBILITY OF CROSS-CONNECTS.					
PROPELLION INTERFACE-A/B	60A/AP264-035/A1-101-00-243 PNEUMATIC VERNIER LOX TANK PRESS. FITTING	FLIGHT 600610	8430 137	A-1/MTR	YES NO	0000423
	FAILURE MODE-LEAK EXTERNAL. HELIUM LEAKAGE AT ENGINE LOX TANK PRESSURIZATION FITTING. AT ENGINE TANKS REPRESSURIZATION (ACCO), ENGINE LOX TANK PRESSURE ROSE TO PNEUMATIC REGULATOR PRESSURE BUT DID NOT START RISING AGAIN UNTIL 175.2 SECONDS AND DID NOT REACH CHARGE LINE PRESSURE UNTIL 186.5 SECONDS.					
	SYSTEM EFFECT-NONE.					
	VEHICLE EFFECT-NONE.					
	CORRECTIVE ACTION-PRESENT BULKHEAD TYPE FITTINGS REPLACED WITH FLANGE TYPE FITTINGS.					

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DIFFUSION THERMO-PROPULSION INTERFACE SYSTEM-AIRBORNE
GENERAL DYNAMICS
CONVAIR DIVISION

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
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FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR DAMAGED TUBING FLARES. THE FLARES CONTAINED DIE MARKS, SCRATCHES AND PIT S. THE DIE MARKS WERE MADE AT THE TIME THE FLARES WERE FORMED. THE SOURCE OF THE SCRACHES AND PITS COULD NOT BE DETERMINED.

CORRECTIVE ACTION STOCK WAS PURGED AND PERSONNEL INSTRUCTED TO MAINTAIN CLOSER SURVEILLANCE TO DETECT AND REJECT SUCH CONDITIONS.

SP-3D-06-232F LINE FAR 1900 FACTORY YES 60/C NO

CORRECTIVE ACTION-NONE, FAILURE NOT CONFIRMED.

PROPELLER INTERFACE-A/B SP-99-08-312/F
PNEUMATIC TUBE ASSEMBLY-B-NEUT
21-20400-159

FAILURE MODE-FAIL DURING OPERATION. B-NUT CRACKED. WOULD NOT HOLD PRESSURE. CRACK HAD STARTED FROM AN INCLUSION AND HAD PROPAGATED THRU THE WALL THICKNESS. MATERIAL WAS 303 CRES.

CORRECTIVE ACTION-MILITARY SPECIFICATION F-5509A AMENDMENT 7 ELIMINATES FURTHER USE OF 303 STAINLESS STEEL FOR AIR
LINE FLUID CONNECTION FITTINGS, DEC. 1982.

FAILURE MODE-LEAK-EXTERNAL. LEAKAGE OCCURRED AT B-NUT BECAUSE OF LOW TORQUE, ATTRIBUTED TO STRESS RELAXATION DUE TO EFFECTS OF TRANSPORTATION, ABNORMAL TESTING OF VEHICLE, AND/OR IMPROPER TORQUE APPLICATION DURING INSTALLATION.

CORRECTIVE ACTION-SITE PERSONNEL RETROGRADE B-NUT AND LEAN STOPPLU. FACTORY PERSONNEL REFERENCED TO KAENIGE HOME CAN E IN TORQUING B-NUTS DURING INSTALLATION.

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GENERAL DYNAMICS

DIFFICULTIES REVIEW-PROBLEMS IN MATHEMATICS

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B PNEUMATIC	N2-A9-08-188F HELIUM STAGING DISCONNECT LATCH	FAR 87-20426-7	1930 830112	FACTORY YES	60/C NO	699859
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED FOR FAILURE DURING A PRESSURIZATION CHECK. EXAMINATION REVEALED THAT THE LANYARD-PIN SPRING-LUMBER WAS NOT SEALED BEHIND THE LOCK-LATCHING BALLS. VARIOUS DIMENSIONAL DISCREPANCIES WERE FOUND IN THE ASSEMBLY TO CAUSE THE PROBLEM.						
CORRECTIVE ACTION-ALL OPERATING BASES CAUTIONED TO USE PARTICULAR CARE IN ASCERTAINING THE DISCONNECT IS PROPERLY LOCKED. ALL PARTS IN STOCK WERE CHECKED FOR DRAWING CONFORMANCE AND THE VENDOR OF THE BUSHING AND PIN WERE REQUESTED TO IMPROVE THEIR QC.						
PROPULSION INTERFACE-A/B PNEUMATIC	A-9-08-177F TUBE ASSEMBLY, HELIUM SUPPLY-B NUT 27-43026-25	FAR 821204	2500 621204	FACTORY YES	60/C NO	699859
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR A CRACKED B NUT. FAILURE CONFIRMED. MATERIAL IDENTIFIED AS TYPE 303 STAINLESS STEEL, WHICH WILL NOT WITHSTAND HIGH STRESSES IN TRANSVERSE DIRECTION.						
CORRECTIVE ACTION-MIL-F-5509A, ANCHOR. 7, RELEASED JAN. 1963 WHICH DELETES TYPE 303 STAINLESS STEEL FOR USE IN AIRBORNE B NUTS.						
PROPULSION INTERFACE-A/B PNEUMATIC	EN-347-103-1	CAPTIVE 570210	3A 570210	3-1/2YC NO	60/C NO	699859
FAILURE MODE-ERRATIC OPERATION. THE BOOSTER LOX REGULATOR REFERENCE PRESSURE WAS ERRATIC. THIS WAS TRACED TO INSUFFICIENT PNEUMATIC PRESSURE FROM THE GROUND SUPPLY.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PROPULSION INTERFACE-A/B LOX FEED	69A3599.3 HOSE ASSY-BUST,	UTP-PRAT START, OXIDIZER 3/ 27-02166-3 4	651209 10071D	YES FLEXIBLE METAL HOSE 10071D		
FAILURE MODE-LEAK SPECIMEN LEAKED 16 SMALL BUBBLES MIN AT 1000 PSIG DURING PROOF PRESSURE PORTION OF THE INITIAL ACCEPTANCE TEST LEAKAGE WAS IN APPROX CENTER OF BRAZED SECTION. REQUIRED PROOF PRESSURE IS 1500 PSIG WITH NO LEAKAGE. REP PARA 5.2 AND 4.7.16.						
CORRECTIVE ACTION-VENDOR IS INITIATING 100 PERCENT INSP OF ALL HOSES. 60C WILL SUBJECT ALL 27-02166-3 HOSES TO PAT						

15 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PMS OTW	VENDOR NAME VENDOR PART NO
TESTING UNTIL FURTHER NOTICE. ADDITIONAL VENDORS ARE BEING CERTIFIED.						
PROPELLION INTERFACE-A/B LOX FEED	CT-98-06-153 FILL-AND-DRAIN VALVE/SEAL	FAR 27-02102-629	651112	36A/ETR	YES AIRESEARCH NO 121072-1	499804

FAILURE MODE-LEAK EXTERNAL. LEAKAGE OF 9.6 SCIN PAST BUTTERFLY SHAFT SEAL OF FILL-AND-DRAIN VALVE NOTED DURING BEING IN LEAK TEST. LEAKAGE ATTRIBUTED TO BUTTERFLY SHAFT SURFACE FINISH BEING 45 MICRO-INCHES INSTEAD OF REQUIRED 32 OR BETTER MICRO-INCHES. IT WAS FOUND THAT AFTER INITIAL INSTALLATION OF SHFT SEAL, LEAKAGE WOULD RESULT UNLESS SEAL WAS FIRST MOVED SLIGHTLY UP AND DOWN ON SHAFT TO PUSH SEAL INTO CORRECT SEATING POSITION.

CORRECTIVE ACTION-FILL-AND-DRAIN VALVES NO LONGER BEING MANUFACTURED BY AIRESEARCH. VALVES NOW IN STOCK ARE BEING REMOVED AND SEALS ARE BEING REPLACED.

PROPELLION INTERFACE-A/B LOX FEED	GDC/BKF55-057/L4-701-00-7113 DUCTING AND TUBING-RIGID	FLIGHT 651108	7113 -30	2-4/PALC YES YES	699950
FAILURE MODE-LEAK-EXTERNAL. LOX LEAKAGE AT UNKNOWN POINT IN THE THRUST SECTION. MOST PROBABLE LEAK POINTS ARE 1) VI LOX SUPPLY LINE, UNION (QUAD 3 APEX 12) ENGINE LOX TANK-TO-STAGING DISCONNECT UNION, 2) SUST. LOX PUMP-TO-LOW PRESSURE DUCT INTERFACE OR BELLOWS SECTION.					

FAILURE MODE-LEAK-INTERNAL. LOX LEAKAGE AT UNKNOWN POINT IN THE THRUST SECTION. MOST PROBABLE LEAK POINTS ARE 1) VI LOX SUPPLY LINE, UNION (QUAD 3 APEX 12) ENGINE LOX TANK-TO-STAGING DISCONNECT UNION, 2) SUST. LOX PUMP-TO-LOW PRESSURE DUCT INTERFACE OR BELLOWS SECTION.

SYSTEM EFFECT-NONE. SYSTEM OPERATION, AS INDICATED BY FLIGHT DATA, WAS NORMAL. LOX LEAKAGE WAS TOO SMALL TO EFFECT PROPELLION SYSTEM OPERATION OR DETECTABLE IN ENGINE DATA.

VEHICLE EFFECT-NONE. LOX LEAK WAS REFLECTED IN LOW ENGINE COMPARTMENT TEMPERATURE DATA DURING COUNTDOWN AND FLIGHT. ALSO EVIDENCE WAS INDICATED IN A FROZEN HYDRAULIC INSTRUMENTATION SENSE LINE (H150P) BEGINNING AT 105 SEC WHEN H150P DATA BEGAN TO DROP FROM 3070 PSIA TO 1500 PSIA.

CORRECTIVE ACTION-UNDER INVESTIGATION AT THIS TIME.

PROPELLION INTERFACE-A/B LOX FEED	CT-98-06-153 FILL-AND-DRAINVALVE,SEAL	FAR 27-02102-629	651026	36A/ETR	YES AIRESEARCH NO 121072-1	499932
FAILURE MODE-EXTERNAL LEAK. LEAKAGE OF 1G SCIN FOUND BETWEEN THE FILL-AND-DRAIN VALVE BODY AND THE MATING SURFACE OF THE ACTUATOR HOUSING WHILE PERFORMING TEST PROCEDURE 36A-3571. ANALYSIS SHOWED PROBLEM CAUSED BY KEL-F SEAL STRESS RELIEVING AND A BENT BUTTERFLY SHAFT SEAL RETAINER. THE KEL-F SEAL HAD NOT BEEN REPLACED SINCE 1961.						

CORRECTIVE ACTION-PER CHANGE ORDER LCCB NO-161C-54 FILL-AND-DRAIN VALVES WILL BE CHECKED PRIOR TO LAUNCH TO ENSURE VALVES NOT LEAKING. RECOMMENDED THAT KEL-F SEALS BE REPLACED AT LEAST ONCE A YEAR AND THAT BUTTERFLY SEAL RETAINER MATERIAL BE CHANGED TO TOUGHER MATERIAL TO PREVENT BENDING. ALSO RECOMMENDED THAT RETAINER SCREW TORQUE REQUIREMENTS BE ESTABLISHED.

13 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	SLV-9B-06-3015P PREVALVE,SPRING	FAR 27-02251-3	651011	12/2/74	YES B.M. HADLEY NO	693173
FAILURE MODE-FAIL DURING OPERATION-UNIT REJECTED FOR HIGH OPERATIN; TORQUE AND A SCRAPING SOUND. CAUSED BY AN IMPROPERLY MANUFACTURED SEAL SPRING AND A BENT SPACER.						
CORRECTIVE ACTION-VENDOR REQUESTED TO REVIEW ASSEMBLY AND INSPECTION TECHNIQUES AND CLARIFY DRAWINGS. GD/C SOURCE I INSPECTORS REQUESTED TO WITNESS FINAL TORQUE MEASUREMENTS MADE BY VENDOR.						
PROPELLION INTERFACE-A/B LOX FEED	CT-9B-06-150 FILL-AND-DRAIN VALVE	FAR 27-02102-029	1740 651011	36AVETR NO 121072-1	YES AIRSEARCH NO	693033
FAILURE MODE-LEAK EXTERNAL. LEAKAGE OF 500 SCIM FOUND BETWEEN THE FILL-AND-RAIN VALVE BODY AND THE MATING SURFACE OF THE ACTUATOR HOUSING WHILE PERFORMING TEST PROCEDURE CTP-PL3-0002. ANALYSIS SHOWED PROBLEM CAUSED BY KEL-F SEAL'S TRESS RELIEVING AND A BENT BUTTERFLY SHAFT SEAL RETAINER. THE KEL-F SEAL HAD NOT BEEN REPLACED SINCE 1961.						
CORRECTIVE ACTION-PER CHANGE ORDER LCCB ND-1610-34 FILL-AND-RAIN VALVES WILL BE CHECKED PRIOR TO LAUNCH TO ENSURE VALVES NOT LEAKING. RECOMMENDED THAT KEL-F SEALS BE REPLACED AT LEAST ONCE A YEAR AND THAT BUTTERFLY SEAL RETAINER MATERIAL BE CHANGED TO TOUGHER MATERIAL TO PREVENT BENDING.						
PROPELLION INTERFACE A/B LOX FEED	SLV-90-06-30141P FILL-AND-DRAINVALVE,SWITCH	FAR 27-02102-33	7111 6910830	2-4/PALC YES STRATOS NO		693172
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED FOR NO VALVE-OPEN INDICATION AND SLOW OPERATION. INDICATION PROBABLY CAUSED BY SILVER TUMPHIDE DEPOSIT ON THE CONTACTS OF THE OPEN SWITCH AND, CORROSION OF THE ROTATING SHAFT CAUSED BY THE SLOW OPERATION.						
CORRECTIVE ACTION-REPLACEMENT OF SWITCHES WITH THOSE HAVING GOLD CONTACTS. VENDOR DELETED USE OF MIL-T-9342 LUBRICANT.						
PROPELLION INTERFACE-A/B LOX FEED	CD/CZ2H65-026-0A1097-/L4-170-0E-71 COMPOSITE-FRD/DPL 11 LOX AIRBORNE FILL AND DRAIN VALVE		7111 693012	2-4/PALC YES NO		
FAILURE MODE-FAIL DURING OPERATION. LOX AIRBORNE FILL AND DRAIN VALVE (LC-8) REQUIRED 20.15 SECONDS TO CLOSE DURING COMMIT Sequence. THE VALVE FAILED TO OPEN COMPLETELY DURING LOX DRAIN.						
SYSTEM EFFECT-OPERATION TOO LONG. DRAIN TIME ONE MINUTE LONGER THAN NORMAL.						
VEHICLE EFFECT-COMPOSITE DELAYED AND RE-SCHEDULED.						

15 JUN 1986

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE C/F TIME	SITE DIF OTH	PRI VENDOR PART NO
CORRECTIVE ACTION-LOR AIRBORNE FILL AND DRAIN VALVE (LC-2) WAS REPLACED.					
PROPELLION INTERFACE-A/B LOX FEED	FAR-SLV 90-06-3013F VALVE, FILL AND DRAIN, LOX AIRBORN 27-0210E-33 E SHAFT	FAN 090809	7112 090809	WTR NO 38-460	YES STRATOS NO 38-460
FAILURE MODE-OUT OF TOLERANCE. REJECTED WHEN THE OPERATING CYCLE WAS TOO SLOW. FAILURE CONFIRMED AND ATTRIBUTED TO CORROSION OF THE BUTTERFLY ROTATING SHAFT. CORROSION WAS RESULT OF USE OF MIL-T-5642 LUBRICANT, AN ALCOHOL AND WATER RINSE. THE WATER REACTED WITH THE LUBRICANT CAUSING THE CORROSION.					
CORRECTIVE ACTION-VENDOR ELIMINATED USE OF LUBRICANT AND ALCOHOL-WATER RINSE. ALL VALVES FROM SAME LOT WERE RETURNED TO VENDOR FOR REPAIR.					
PROPELLION INTERFACE-A/B LOX FEED	AAS-0028/P4-7BN-03-3301 LOX Y DUCT	COMPOSITE-FRD/DPL 090707	2301 090707	14/ETR NO	NO
FAILURE MODE-STRUCTURAL. THE LOX LOADING VALVES WERE OPERATED OUT OF PROPER SEQUENCE. L-3 WAS OPENED BEFORE THE A/B FILL AND DRAIN VALVE. AS A RESULT THE LOX Y DUCT WAS DAMAGED.					
SYSTEM EFFECT-LOSS OF STRUCTURAL INTEGRITY. THE LOX Y DUCT WAS STRUCTURALLY DAMAGED DUE TO THE TOPPING PRESSURE CRATING A HAMMER EFFECT BECAUSE THE A/B FILL AND DRAIN VALVE WAS STILL CLOSED.					
VEHICLE EFFECT-COMPOSITE DELAYED.					
CORRECTIVE ACTION-A CAUTION NOTE WAS ADDED TO THE PROCEDURE TO PRECLUDE THIS PROBLEM.					
PROPELLION INTERFACE-A/B LOX FEED	SLV-90-06-3013F FILL AND DRAIN VALVE-SHAFT	FAN 27-0210E-33	7112 090702	2-4/PALC YES STRATOS NO	NO
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR OPERATING CYCLE BEING TOO SLOW, AS RESULT OF CORROSION OF THE BUTT FLY ROTATING SHAFT. CORROSION WAS THE RESULT OF USING MIL-T-5642 LUBRICANT AND A WATER-ALCOHOL RINSE.					
CORRECTIVE ACTION-VENDOR ELIMINATED USE OF MIL-T-5642 LUBRICANT.					
PROPELLION INTERFACE-A/B LOX FEED	BKF85-031/P4-7BN-03-2285 LOX BREAKAWAY VALVE	COMPOSITE-FRD/DPL 090630	2250 -126	13/ETR NO	NO
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. LOX TEMPERATURE AT LOX BREAKAWAY VALVE ABOVE REDLINE.					
SYSTEM EFFECT-NONE. TEMPERATURE AT LOX BREAKAWAY VALVE TOO HIGH.					
VEHICLE EFFECT-COUNTDOWN RESCHEDULED.					

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**GENERAL DYNAMICS
COVAIR DIVISION**

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

15 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH VENDOR PART NO	690005
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-RE-TORQUED & MWT.						
PROPELLION INTERFACE-A/B LOX FEED	27A4029 LOX CHECK VALVE	UTP-PET 27-02403-3	6900406 FACTORY NO E630013			6900335
FAILURE MODE-OUT OF SPECIFICATION.DURING PET PRE-VIBRATION TEST OPERATION AND LEAKAGE CHECK, THE SPECIMEN LEAKED 14 3 SCIM AT 400 PSIG. ALLOWABLE IS 300 SCIM. REF. S/N 409-0226 T.M. NO. 3.						
CORRECTIVE ACTION-NONE. REF. CTCIN NO. 931-1-003.						
PROPELLION INTERFACE-A/B LOX FEED	27A4029 LOX CHECK VALVE, SEAL	UTP-PET 27-02403-3	6900401 FACTORY NO E630013			6900340
FAILURE MODE-OUT OF SPECIFICATION.DURING PET PROOF CYCLES AFTER 300 CYCLES THE INTERNAL LEAKAGE WAS 1000 SCIM AT 40 0 PSIG AND 1100 SCIM AT 1000 PSIG. ALLOWABLE LEAKAGE IS 300 SCIM. THE POPPET SEATING AREA WAS FOUND TO BE BADLY CHIPPED ID. REF. S/N 409-0226 T.M. NO. 2.						
CORRECTIVE ACTION-NONE. REF. CTCIN NO. 931-1-002.						
PROPELLION INTERFACE-A/B LOX FEED	27A4029 LOX CHECK VALVE	UTP-PET 27-02403-3	6900401 FACTORY NO E630013			6900336
FAILURE MODE-OUT OF TOLERANCE. DURING PET PROOF CYCLES AFTER 300 AND 1000 CYCLES, THE SPECIMEN CRACKING PRESSURE WAS 3.0.018 PSID. ALLOWABLE CRICKING PRESSURE RANGE IS 0.03 TO 1.0 PSID. REF. S/N 409-0226 T.M. NO. 2.						
CORRECTIVE ACTION-NONE. REF. CTCIN NO. 931-1-002.						
PROPELLION INTERFACE-A/B LOX FEED	27A4257 LOX FILL AND DRAIN VALVE BOLTS	UTP-PET 27-02108-3	6900222 FACTORY NO 59-480-01			6900322
FAILURE MODE-OUT OF SPECIFICATION. DURING PET PROOF PRESSURE TEST AT 110 PSIG WITH VALVE BLADE CLOSED, EXCESSIVE LEAKAGE WAS OBSERVED IN THE MIDPLANE AREA. A TORQUE CHECK OF THE BOLTS AND SCREWS REVEALED ONLY 7 OUT OF 30 BOLTS WIT IN THE SPECIFIED TORQUE LIMITS. EXCESSIVE GAP WAS ALSO MEASURED IN THE MIDPLANE MATING AREAS. REF. S/N 409-0226 T.M. NO. 2.						

13 JUN 1986

GENERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW- PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF OTN	VENDOR NAME VENDOR PART NO
						692461

CORRECTIVE ACTION-REJECT THE VALVE AND RETURN ALL VALVES IN LOT TO VENDOR FOR REINSPECTION AND REWORK AS NECESSARY.
INITIATE ACTION TO HAVE VENDOR INCLUDE IN IAT A TORQUE CHECK AND RETORQUING AS NECESSARY WHEN THE VALVE IS FILLED W/ 1TH LN2 AND AGAIN WHEN THE VALVE WARMS UP. INITIATE FOLLOW-UP QA ACTION TO TIGHTEN UP VENDOR QC. REF. T.H. NO 692-6-024 (LOT NO.2).

PROPELLION INTERFACE-A/B
LOX FEED
27A427
UTP-PET
27-02102-33
692463

FAILURE MODE-CONTAMINATION. DURING EXAMINATION OF PRODUCT A WHITE CHALK LIKE SUBSTANCE WAS STICKING TO THE BUTTERFLY VALVE. (PET LOT CONTROL TEST) THE VENDOR WAS NOT ENFORCING OR ADHERING TO LUBRICANT AND CLEANING RESTRICTIONS AND REQUIREMENTS OF HIS ASSEMBLY PROCEDURES AND DRAWINGS. REF S/N 403-3200 T.H. NO.1.

CORRECTIVE ACTION-REJECT THE VALVE AND RETURN ALL VALVES IN LOT TO VENDOR FOR REINSPECTION AND REWORK AS NECESSARY.
INITIATE FOLLOW-UP QA ACTION TO TIGHTEN UP VENDOR QC. REF T.H. NO 692-6-022 (LOT NO.2).

PROPELLION INTERFACE-A/B
LOX FEED
27A427
UTP-PET
27-02102-33
692462

FAILURE MODE-OUT OF SPECIFICATION. DURING PET EXAMINATION OF PRODUCT THE MIDDLE BOLTS WERE TORQUE CHECKED AND WE RE FOUND BELOW SPECIFIED LIMITS UNDER THE VALVE OUTLET. THE VENDOR WAS NOT ENFORCING TORQUE REQUIREMENTS OF HIS ASSEMBLY PROCEDURES AND DRAWINGS. REF S/N 403-3200 T.H. NO 1.

CORRECTIVE ACTION-REJECT THE VALVE AND RETURN ALL VALVES IN LOT TO VENDOR FOR REINSPECTION AND REWORK AS NECESSARY.
INITIATE FOLLOW-UP QA ACTION TO TIGHTEN UP VENDOR QC. REF T.H. NO 692-6-022 (LOT NO.2).

PROPELLION INTERFACE-A/B
LOX FEED
AA65-0007/PZ-001-00-198
VALVE-PRE LOX
COUNTDOWN
1980
692465
12/ETR
-6100
NO

FAILURE MODE-OUT OF TOLERANCE. THE CAUTION PLAS ATTACHED TO THE LOX PRE-VALVE WAS NOT REMOVED WHEN THE VALVE WAS OPERATED.
SYSTEM EFFECT-NONE.
VEHICLE EFFECT-COUNTDOWN DELAYED FOR 10 MINUTES.

CORRECTIVE ACTION-TOWER HAS RETURNED TO LAUNCHER IN ORDER TO REMOVE THE LOX PRE-VALVE CAUTION PLAS.

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B LOX FEED	27A3662 BOOSTER LOX START HOSE ASSY	UTP-PET 27-02173-3		650216	FACTORY YES FLEX METAL NO H3468-3F	092329
FAILURE MODE-LEAK EXTERNAL. A LEAK CHECK WITH SPECIMEN SUBMERGED IN WATER USING CH ₄ AT AMBIENT TEMPERATURE FOLLOWING 6 CYCLES REVEALED A LEAK IN THE BRAID NEAR THE SHORT TUBULAR END. REF. S/N 403-0164 T.H. NO. 1.						
CORRECTIVE ACTION-STOP TESTING. REJECT LOT BACK TO VENDOR. REF. CTCM NO. 662-6-021.						
PROPULSION INTERFACE-A/B LOX FILL AND DRAIN VALVE	69A3652.2 LOX FILL AND DRAIN VALVE	UTP-SLT 27-02102-33		650212	FACTORY YES STRATOS NO 59-460-01	092490
FAILURE MODE-LEAK-EXTERNAL. DURING BURST PRESSURE TEST FOLLOWING SLT VIBRATION LEAKAGE WAS OBSERVED AT 200 PSIG BY THE SPLINED SHAFT OF BUTTERFLY VALVE AND MIDFLANGE BOLTS NO 3 AND 4 ON BOTH SIDES OF THE CENTERLINE OF THE VALVE OUTLET. THE TORQUE ON THE BOLTS IN THESE AREAS WAS FOUND TO BE RELAXED. REF S/N 403-3214 T.H. NO. 6.						
CORRECTIVE ACTION-CHECK TORQUE ON LEAKING BOLTS. NO FURTHER ACTION SINCE VALVE HAD BEEN SUBJECT TO EXCESSIVE VIBRATION LOADS DURING SLT RANDOM VIBRATION TESTS. REF T.H. NO 662-6-020.						
PROPULSION INTERFACE-A/B LOX FILL AND DRAIN VALVE, SEAL	69A3652.2 LOX FILL AND DRAIN VALVE, SEAL	UTP-PRT 27-02102-33		650127	FACTORY YES STRATOS NO 59-460-01	092499
FAILURE MODE-LEAK. DURING PRT INITIAL ACCEPTANCE TEST THE VALVE LEAKED 74 CC/MIN THRU THE BUTTERFLY SEAL WITH 20 PSIG GAGE. ALLOWABLE LEAKAGE IS 2 CC/MIN. REF S/N 403-3214 T.H. NO. 5.						
CORRECTIVE ACTION-IN-CYCLE THE BUTTERFLY VALVE OPEN AND CLOSED AND CHECK GAGE LEAKAGE RATE AT 20 PSIG EVERY FIFTH CYCLE • LEAKED DROPPED TO LESS THAN 2 CC/MIN AFTER FIFTH CYCLE. CONTINUE TESTING. REF T.H. NO 662-6-016.						
PROPULSION INTERFACE-A/B LOX FEED	27A4257	UTP-PET 27-02102-33		650123	FACTORY YES STRATOS NO 59-460-01	092498
FAILURE MODE-OUT OF SPECIFICATION. THE EXTERNAL MATING PLATES WERE FOUND TO BE DIMENSIONALLY OUT OF TOLERANCE SO THAT THE VALVE COULD NOT BE MATED TO THE TEST FIXTURE. THE VENDOR INSPECTION METHOD FOR THIS ASSEMBLY EMPLOYED THE USE OF A POINT REFERENCE FOR RELATED DIMENSIONS INSTEAD OF A POINT AND FIXED PLANE REFERENCE. REF S/N 403-3231 T.H. NO. 1 AND 2.						
CORRECTIVE ACTION-REJECT THE VALVE AND RETURN TO VENDOR FOR REWORK. ALL VALVES IN LOT WERE REJECTED AND RETURNED TO VENDOR FOR REINSPECTION AND REWORK AS REQUIRED. REF IR NO 403045 AND T.H. NO 662-6-016. (LOT NO. 2).						

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GENERAL DYNAMICS
COMMUNICATION

DIFÍCILIES IN THE USE OF THE INTERNET IN THE CLASSROOM

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLANT INTERFACE-A/B LOX FIELD	#943552-2 LOX FILL AND DRAIN VALVE	UTP-PRT 27-00102-33	#90014	FACTORY	YES	STRATOS NO 59-460-01

FAILURE MODE-OUT OF TOLERANCE. DURING PHT-LAT PROOF CYCLE EXCESSIVE INTERNAL GAP AND GHE LEAKAGES WERE NOTED. WITH FSIG GHE THE LEAKAGE PAST THE BUTTERFLY SEAL WAS 160 CC/MIN. WITH 2 PSIG GHE THE LEAKAGE WAS 200 CC/MIN. MAXIMUM MILLIMILLICLICRILEAGE IS 2 CC/MIN IN BOTH CASES. THE FAILURE WAS CAUSED BY THE SEAL BEING TOO LARGE IN DIAMETER. REF 9/N 412-3145 T.H. NO2 AND 4.

VEHICLE EFFECT-HOME.

CORRECTIVE ACTION-STOP TESTING. RETURN SPECIMEN TO VENDOR FOR REWORK. OBTAIN REPLACEMENT VALVE AND RESTART TEST. RE-
S/N 412-3131 TH. NO 4 AND 18 NO. 100101A.

PROPELLION INTERFACE-A/B
LOX FEED 6938582-2 LOX FILL AND DRAIN VALVE NUTS
UTP-PRT 27-02102-33 #50114 FACTORY YES STRATOS
NO 5B-460-01

FAILURE MODE-OUT OF TOLERANCE. DURING INITIAL PRT PROOF CYCLE SEVERAL EXTERNAL LNB LEAKS OCCURRED AT 100 PSIG. LOCH 4112-31445. /T.H. NOE AND S. JONES. 10/15/1987.

CORRECTIVE ACTION-RETORQUE ALL BOLTS TO SPEC REQUIREMENTS. RECHECK EXTERNAL LIN# LEAKAGE. REJECT ALL VALVES IN THIS LOT TO VENDOR FOR REINSPECTION AND REMAKE AS NECESSARY. INITIATE FOLLOW-UP QA ACTION TO TIGHTEN UP VENDOR QC. REF BO NO 400419, AND 400418A T H NO 1

FAILURE MODE-LEAKAGE. THE INTERNAL LEAKAGE RATE OF 300 SCCM EXCEEDED THE ALLOWABLE MAXIMUM OF 50 SCCM WHEN PRESSURE DROPPED TO 4 PSIG. THE BUTTERFLY WAS FOUND TO BE SLIGHTLY CORRODED AND A RUST FILM ADHERED TO THE INSIDE OF THE VALVE SO.

FOR CORRECTIVE ACTION-REVISE THE PET TEST PROCEDURE TO INSURE THAT THE WATER UTILIZED DURING THE DYNAMIC FLUTTER TEST IS FREE OF CONTAMINATES SUCH AS CAUSED THIS FAILURE.

ALLURE MODE-OUT OF TOLERANCE. DURING PET SAT TESTS, THE SPECIMEN CRACKING PRESSURE WAS 0.014 PSID. ALLOWABLE CRACK PRESSURE RANGE IS FROM 0.03 TO 1.0 PSID. REF. S/N 400-0008A T.M. NO. 1.

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GENERAL DYNAMICS CONVENTIONAL DRILLING

DISTINCTIVE FEATURES OF INTERCULTURAL INTELLIGENCE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO

PROPELLION INTERFACE-A/B
LOR FEED
11943969,1
SUSTAINER LOR START LINE
UTP-PAT
27-02169-3
641216
FACTORY
YES FLEXIMETAL
NO 10071
692446

FAILURE MODE-LEAK-EXTERNAL. DURING PAT FINAL SATISFACTORY PERFORMANCE UNDERWATER LEAK TEST FOLLOWING IAT, EOP AND X-AXIS VIBRATION TEST THE SPECIMEN LEAKED 5 BUBBLES/MINUTE AT THE TERMINAL CAP OF THE WIRE BRAID OF THE CENTER FLEX SECTION WHEN EXPOSED TO 15001 PAT CAP. REF. N.M. AND-O-104A T.M. NO 7.

CORRECTIVE ACTION-STOP TEST. RETURN SPECIMEN TO VENDOR FOR FAILURE ANALYSIS AND REWORK. REF. IN W03100 AND CTC TM 68
2-1-008.

PROPELLION INTERFACE-A/B
LOX FEED

6943969-1
LUSTAINER LOX START LINE

UTP-PAT
27-02166-5

641214
FACTORY
NO 10071

YES FLEXIMETAL

692447

FAILURE MODE-LEAK-EXTERNAL. DURING PAT UNDERWATER LEAK TEST FOLLOWING ECP, IAT, AND X-AXIS VIBRATION TEST, THE SPECIMENT LEAKED 0.5 SCFM AT THE WELDED TERMINAL CAP OF THE SHOTTER SECTION WHEN EXPOSED TO 750 PSIG GAGE. REF. 3/M403-0146

CORRECTIVE ACTION-STOP TEST. RETURN SPECIMEN TO VENDOR FOR FAILURE ANALYSIS AND REWORK. REP. IN OSOTR0 AND COTRM-007.

PROPELLION INTERFACE-A/B
LOX FEED SUSTAINER LOX DIANT LINE
09A969-1 UTP-PAT
27-02166-3 FACTORY YES FLEXIMETAL
NO 10071

CORRECTIVE ACTION-STOP TEST. RETURN SPECIMEN TO VENDOR FOR FAILURE ANALYSIS AND REWORK. REF.IR 0082337 AND CICTM NO. 022-6-006.

PROPELLION INTERFACE-A/B **69A3969-1** **SUB "A" MNR LOX START LINE** **UTP-PAT** **87-0266-1** **W11207** **FACTORY YES FLEXMETAL**

FAILURE MODE-LEAK-EXTERNAL. DRIVING PAT 1 AT THE SPECIMEN LEAKED A BCCM AROUND THE TERMINAL CAP OF THE WIRE BRAID IN THE LONGER END SECTION WHEN EXPOSED TO 1500 PSLG GRS UNDER WATER. REP. S/N 401-0159 T-1100.

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15 JUN 1986

**GENERAL DYNAMICS
CONVAIR DIVISION**

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	ORF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI DATE OF TIME OF	OTN VENDOR PART NO
692445						

CORRECTIVE ACTION-STOP TEST. RETURN SPECIMEN TO VENDOR FOR FAILURE ANALYSIS AND REWORK. REF. IR NO 970969 AND CTCTH NO 662-6-004.

PROPELLION INTERFACE-A/B LOX FEED	69A3989.1 SUSTAINER LOX START LINE	UTP-PAT 27-02168-5	64113U	FACTORY YES FLEXMETAL NO 100%	692444
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FAILURE MODE-LEAK-EXTERNAL. DURING IAT THE SPECIMEN LEAKED 3 SECIN WHEN EXPOSED TO 1500 PSIG GNE UNDERWATER. LEAKAGE OCCURRED AT THE WIRE BRAID TERMINAL CAP OF THE CENTER SECTION. REF. S/NADS-0140 T.H.NG3.

CORRECTIVE ACTION-STOP TEST. RETURN SPECIMEN TO VENDOR FOR FAILURE ANALYSIS AND REWORK. REF. IR NO 970963 AND CTCTH NO 662-6-003.

PROPELLION INTERFACE-A/B LOX FEED	WSE-3035/WA VALVE, FILL AND DRAIN	COUNTDOWN	106F	G/WTR YES NO	690992
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FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. INDICATION ON LCC THAT LOX AIRBORNE FILL AND DRAIN VALVE HAD NOT OPERATED.

SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.

VEHICLE EFFECT-COUNTDOWN ABORTED.

CORRECTIVE ACTION-NONE PROPER VALVE INDICATIONS WERE RECEIVED DURING ABORT SEQUENCE AND DURING POST-TEST INVESTIGATIONS.

PROPELLION INTERFACE-A/B LOX FEED	69A3852 LOXPILLANDRAINVANE, SEAL	UTP-PAT 27-02102-33	641114	FACTORY YES STRATOS NO 39-480-01	690980
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FAILURE MODE-EXTERNAL LEAKAGE. DURING PROOF CYCLE FOLLOWING Z-AXIS PRT VIBRATION AT 65 PSIG LNR, LEAKAGE WAS OBSERVED BEHIND THE BUTTERFLY VALVE SHARP END COVER. THE LEAKAGE CEASED WHEN PRESSURE WAS RELEASED. LEAKAGE INITIALLY OCCURRED AT 25 PSIG AT THE LOWER R/H SCREW AROUND THE LOWER EDGE. UPON PARTIAL DISASSEMBLY, TWO LONG SCRATCHES WERE FOUND ON THE SEALING FACE OF THE SEAL SEAT. REF. S/N971-3063 T.H. NO.2.

CORRECTIVE ACTION-OVER TORQUE ALL SCREWS, HOLDING THE SHAPED END COVER, TO 45 IN/LBS FOR TEST PURPOSES ONLY. INITIATE A CALL AND VISIT TO IMPROVE VENDOR S.C.

15 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	GOA/BKF84-049/P3-001-00-289/3800 LOX LINE-SEAL	FLIGHT 841105	289D 841105	13/ETR 82.	YES NO	693926
FATURE MODE-OUT OF EXPECTED VALUE. LOX LEAK SUSPECTED AREAS ARE SUSTAINER LOX BOOTSTRAP LINE AT CHECK VALVE, LOX PUMP INLET AND VALVE, HS VALVE AREAND LOX MANIFOLD.						
SYSTEM EFFECT-LOW TEMPERATURE ENVIRONMENT. INSTRUMENTATION SENSE LINES FOR MEASUREMENT OF SUSTAINER FUEL PUMP INLET AND DISCHARGE PRESSURES WERE FROZEN.						
VEHICLE EFFECT-HOME.						
CORRECTIVE ACTION-FEASIBILITY OF INSULATING SENSE LINES IS BEING STUDIED. AN ADDITIONAL LEAK CHECK WILL BE PERFORMED ON X MINUS 1 DAY FOR SUBSEQUENT VEHICLES.						
PROPELLION INTERFACE-A/B LOX FEED	LV-00-06-3001F FILL AND DRAIN VALVE, SCREW	PAR 27-08102-629	286D 841001	12/ETR NO	YES ATRESEARCH NO	693934
FATURE MODE-LEAK EXTERNAL. LEAKAGE WAS OBSERVED FROM THE PARTING SURFACE OF THE ACTUATOR AND VALVE BODY. CAUSE WAS LOW EVEN PRESSURE OF THE FOUR ATTACH SCREWS ON RETAINING PLATE AND SEAL. 1 OTHER CASE REPORTED IN PAR LV-00-3012F.						
VEHICLE EFFECT-HOME.						
CORRECTIVE ACTION-VENDOR CONSIDERED PRESENT PROCEDURES ADEQUATE. NO ACTION TAKEN.						
PROPELLION INTERFACE-A/B LOX FEED	GOA-AP264-061/A3-001-00-247 ENGINE LOX TANK PRESS. FITTING	FLIGHT 840922	247D 840922	A-3/MTN 174	YES NO	693931
FATURE MODE-LEAK EXTERNAL. HELIUM LEAKAGE AT ENGINE LOX TANK PRESSURIZATION FITTINGS. ENGINE LOX TANK PRESSURE ROSE FROM 665 PSIA TO 685 PSIA BETWEEN 173.7 AND 177.0 SECONDS.						
SYSTEM EFFECT-HOME.						
VEHICLE EFFECT-HOME.						
CORRECTIVE ACTION-PRESENT BULKHEAD TYPE FITTINGS REPLACED WITH FLANGE TYPE FITTINGS.						
PROPELLION INTERFACE-A/B LOX FEED	LV-00-06-295F FILL AND DRAIN VALVE, SEAL	PAR 27-08102-63	353D 840810	2-3/PALC NO	YES STRATO NO SB-480	693930
FATURE MODE-CONTAMINATION. UNIT REJECTED FOR A DARK COLORED MATERIAL ON THE LIP SEAL. MATERIAL WAS FOUND TO BE LOX -SAFE.						
VEHICLE EFFECT-HOME.						
CORRECTIVE ACTION-HOME.						

GENERAL DYNAMICS
COMMUNICATIONS

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DIFFICULTIES REVIEW—PROFOUND SYSTEM-AIRBORNE INTERFACE

SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B LOX FEED	GDA/BKF64-036/L4-403-00-1101 VI LON OFFICE	FLIGHT 00-22120-17	7101 840314	2-4PALC YES SD/C NO		

FAILURE MODE-OUT OF TOLERANCE. HIGHER THAN PLANNED THRUST IN THE VI ENGINE CAUSED BY THE ABSENCE OF THE 60/C LOX OR IN THE VI ENGINE SYSTEM. ORIFICE WAS PROBABLY LOST AT THE TIME THE VERNIERS WERE REMOVED FOR CLEANING FOR REPAIRING THE VI AND THE TIME THE REPLACEMENT ENGINES WERE INSTALLED IN THE FIELD.

THE ENGINE THUMBS APPROPRIATELY 25 PER CENT IN CHINA AS WELL.

THE UNIVERSITY OF TORONTO LIBRARIES
SERIALS RECEIVED BY THE LIBRARY

CORRECTIVE ACTION-APPROPRIATE QUALITY CONTROL MEASURES AND HARDWARE REDESIGN TO PROVIDE A LOCK-IN FEATURE FOR THE OFFICE WERE INITIATED TO PRECLUDE RECURRENCE OF THE PROBLEM.

PROPELLION INTERFACE-A/B
LOW FEED
SLV-90-06-288F
Y DUCT 8003

FAILURE MODE-STRUCTURAL. TWO UNITS REJECTED FOR WELD CRACKS WHILE ANCHORING SURVEY 86-84. CRACKED BOSS WELDS WERE UNLEASHED BY EXCESSIVE NON-METALLIC INCLUSIONS. UNRELIEVED STRESSES CAUSED BY EXCESSIVE MONOCRISTALLINE CAVITATION.

INSTITUTED 100 PCT. RADIO-GRAPHIC INSPECTION OF WELDS BEFORE AGE HARDENING. SUCH INSPECTION CORRECTIVE ACTION-GD-C INSTITUTED 100 PCT. RADIO-GRAPHIC INSPECTION OF WELDS BEFORE AGE HARDENING. SUCH INSPECTION AFTER AGE HARDENING WAS RETAINED. THE TRANSJUCER LOCATION WAS CHANGED FROM THE FAILED BOSS TO ANOTHER BOSS. A SUPPORT BRACKET WAS ADDED FOR A TRANSDUCER.

PROPULSION INTERFACE-A/B
LOCK FEED
LV-93-06-2292F
FILLANDRAINVALVE, SEAL

FAILURE MODE-LEAKAGE. UNIT REJECTED FOR INTERNAL LEAKAGE CAUSED BY A NYLON BRUSH BRISTLE LODGED BETWEEN BUTTERFLY 3

CORRECTIVE ACTION-60/C FACTORY AND VENDOR ADVISED TO BE MORE CAREFUL WHEN USING BRUSHES.

PROPELLION INTERFACE-A/B
LV-9B-06-283F
FILL AND DRAIN VALVE
LON FEED

FAILURE MODE-OUT OF TOLERANCE, UNIT REJECTED FOR A CRACKED WELD. FOUR CRACKS WERE FOUND IN OR ADJACENT TO WELDS AND THESE ATTRIBUTED TO IMPENETRATING SPOTWELDING AND INSPECTION TECHNIQUE.

FLUORESCENT-PENETRANT INSPECTION TO HIS 900 IN MAY 1962. THIS VALUE WAS ACCEPTED PRI-

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SYSTEM SUB-SYSTEM		TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
OR TO THAT DATE.							
PROPELLION INTERFACE-A/B LOX FEED	A-90-06-282C	Y DUCT MANIFOLD, RCSA	FAR 7-2305-081	2430 64U829	WTR	YES 60/C NO	001616

FAILURE MODE-STRUCTURAL- UNIT WAS REJECTED FOR AN INSTRUMENTATION BOSS MELTDOWN CRACK. NO FAILURE ANALYSIS PERFORMED

CORRECTIVE ACTION-NONE.

PROPELLION INTERFACE-ABA
LOW FEED
FR69H-2663.5
BLOCK 1 ON START W/OF ASSESS
UTP-PRT
640023
FACTORY
NO FLEX METAL
692281

FAILURE MODE-OUT OF TOLERANCE. DURING PAT WITH THE TEST SPECIMEN PRESSURIZED TO 600 PSIG USING LINE THE FORCE REQUIRED TO DEFLECT POINT F WAS 63 POUNDS VS. 60 POUNDS ALLOWABLE. REF. SN 3192-018 T.H. NO. M-A6022-B.

FAILURE MODE-LEAK EXTERNAL. MEASUREMENT PI-AT INDICATED 30 TO 70 DEG LOWER THAN NORMAL ENGINE COMPARTMENT TEMPERATURE AT SEC-0. SENSING LINE FOR SUSTAINER FUEL PUMP DISCHARGE PRESSURE TRANSDUCER INDICATED A FROZEN CONDITION AFTER 193 SECONDS.

SYSTEM EFFECT NONE. THE AMOUNT OF LIQUID LOST IN THIS CASE, HOWEVER, HAD NO EFFECT ON SYSTEM PERFORMANCE.

VEHICLE EFFECT-HOME.

CORRECTIVE ACTION-INVESTIGATING POSSIBILITY OF INSULATING CRITICAL HYDRAULIC AND FUEL LINES IN THRUST SECTION. ALSO
CORRECTIVE ACTION-MODIFICATIONS TO CUSHION MACHINING MACHINES TO ELIMINATE VIBRATION.

FAILURE MODE-OUT OF TOLERANCE. WITH THE TEST SPECIMEN PRESSURIZED TO 800 PSI USING LINE THE FORCE REQUIRED TO DEPLETE POINT F WAS 110 POUNDS. ALLOWABLE OFF. A/N 110-014 T.M. NO. M-1400-1

CONNECTIVE ACTION-HOME: THE TEST PICTURE IMPOSED IMPROPER RETENTION ON THE CENTER OF THE IMAGE.

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DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE D/F	SITE TIME D/F	PRI DIF OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B LOX FEED	A1-4HO-02-213 Y-DUCT, BCAS	COMPOSITE-FRD/DPL 7-83205-821	243D 640609	A-1/WTR NO	YES NO	002323
A/C READINGS AT LEAST TWICE THE AMOUNT THEY SHOULD HAVE BEEN. REF. RTE 27-02173-001-28 OCT 1984.						
FAILURE MODE-LEAK-EXTERNAL. LOX Y-DUCT LEAKING AT P1021 INSTRUMENTATION BOSS.						
SYSTEM EFFECT-NONE.						
CORRECTIVE ACTION-LOX Y DUCT REPLACED.						
PROPELLION INTERFACE-A/B LOX FEED	27A3538 QUARTER LOX START HOSE ASSY	UTP-PET 27-02173-3	640609 NO	FACTORY WMA80-SP	YES FLEX METAL NO	002324
FAILURE MODE-LEAK EXTERNAL. DURING PET Y AXIS VIBRATION WITH UNIT PRESSURIZED TO 800 PSIG WATER FOLLOWING X AND Z A XIS VIBRATION AT 65 CPS. THE HOSE BEGAN TO LEAK THROUGH THE FLEX SECTION ON THE INSIDE RADIUS NEAR THE SHORT SOLID TUBE. REF. S/N 403-0182 T.H. NO. 1.						
CORRECTIVE ACTION-STOP TESTING. REJECT LOT BACK TO VENDOR. REF. IR NO 904981; FPR NR P 5110 SNT AND FRR NO. FR 054-2-108.						
PROPELLION INTERFACE-A/B LOX FEED	SLY-9D-06-224F V/E SUPPLY LINE E' BOW B-MUT	FAR 69-22124-5	243D 640608	2-4/PALC NO	YES GD/C	002327
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR A B-HUT SEIZING ON THE ELBOW. CAUSE OF SEIZURE WAS SEVERE GALLING OF THE HUT AND ELBOW BEARING SURFACES DUE TO THE LACK OF LUBRICATION. 1 OTHER CASE REPORTED ON FAR SLY-9D-06-220F.						
CORRECTIVE ACTION-LUBRICATION REPORT AND AFFECTED DRAWINGS REVISED TO ADD LUBRICATION REQUIREMENTS FOR THE ABOVE PARTS. TO BE APPLIED PRIOR TO INSTALLATION.						
PROPELLION INTERFACE-A/B LOX FEED	A1-4HO-01-213 DUCT	COMPOSITE-FRD/DPL 7-83205-821	243D 640602	A-1/WTR NO	YES NO	002325
FAILURE MODE-STRUCTURAL. LOX Y-DUCT WAS DAMAGED.						
SYSTEM EFFECT-LOSS OF STRUCTURAL INTEGRITY.						
VEHICLE EFFECT-NONE. (DUCT DAMAGE WAS DISCOVERED AFTER DPL).						
CORRECTIVE ACTION-UNKNOWN DAMAGE BELIEVED TO BE CAUSED BY AIRBORNE FILL AND DRAIN VALVE AND TOPPING VALVE OPENING A						

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DIFFICULTIES REVIEW-PROPELLSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENCH PART NO
NO CLOSING SEQUENCE RELATIVE TO EACH OTHER CAUSING RAN EFFECT IN DUCT DURING TOPPING FOR EXTENDED TIME.						
PROPELLSION INTERFACE-A/B LOX FEED	27A3460 LOXFILL AND DRAIN VALVE, SEAL	UTP-PET 27-02102-23	640908	FACTORY NO 59-460	YES STRATOS	000001
FAILURE MODE-INTERNAL LEAK. DURING THE 135TH PET LIFE CYCLE THE OPEN BUTTERFLY BLADE VALVE SEAL ACCIDENTLY TOUCHED ITS MATING NOZZLE. RESULTANT LEAKAGE PAST THE BLADE VALVE WAS 11 SCIM WITH 2 PSIG HELIUM GAS AND 55 SCIM WITH 20 PSIG 6 GND. NO GND LEAKAGE WAS VISIBLE AT PRESSURES UP TO 120 PSIG. AT 173 LIFE CYCLES LEAKAGE HAD DECREASED TO 2.5 SCIM WITH 2 PSIG HELIUM GAS AND 30 SCIM WITH 20 PSIG. REF. S/N 403-3204 T.H. NO. 2.						
CORRECTIVE ACTION-NONE.						
PROPELLSION INTERFACE-A/B LOX FEED	27A3460 LOXFILL AND DRAIN VALVE SWITCH	UTP-PET 27-02102-23	640422	FACTORY NO 59-460	YES STRATOS	000434
FAILURE MODE-ERRATIC OPERATION. DURING THE ELEVENTH PET LIFE CYCLE AT 0 DEGREES LATERAL MISALIGNMENT POSITION, MIT HI VALVE FILLED WITH LN2 AND PRESSURIZED TO 60 PSIG. THE MICROSWITCH INDICATING VALVE POSITION OPERATED INTERMITTENTLY AND CONTINUED THROUGHOUT THE REMAINING LIFE CYCLES. REF. S/N 403-3204 T.H. NO. 1.						
CORRECTIVE ACTION-NONE. REF. FPR NR F-5102 SWT. (LOT 6).						
PROPELLSION INTERFACE-A/B LOX FEED	27A3460 LOXFILL AND DRAIN VALVE, SEAL	UTP-PET 27-02102-23	640422	FACTORY NO 59-460	YES STRATOS	001009
FAILURE MODE-LEAK-EXTERNAL. DURING THE FOURTH PET LIFE CYCLE AT 90 DEGREES LATERAL MISALIGNMENT POSITION INTERMITTENT EXTERNAL LN2 LEAKAGE WAS NOTED PAST THE PROBE LIP SEAL (BUTTERFLY SEAL). VALVE WAS FILLED WITH LN2 PRESSURIZED TO 60 PSIG. LEAKAGE CONTINUED FOR REMAINDER OF LIFE CYCLES. REF. S/N 403-3204 T.H. NO. 1.						
CORRECTIVE ACTION-NONE. REF. FPR NR F-5102 SWT (LOT 6).						
PROPELLSION INTERFACE-A/B LOX FEED	BLV-AB-U6-274F VALVE-FILL AND DRAIN, SWITCH	FAR 27-02102-23	7101	FACTORY NO	YES STRATOS	001140
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR FAILURE TO CLOSE DURING CHECKOUT. PROBLEM CAUSED BY A LIMIT SWITCH WHICH CONTAINED BURNED CONTACTS AND CRACKED CARE SPRING DIAPHRAGMS.						
CORRECTIVE ACTION-NONE, AS RESULT OF THIS FAILURE. FURTHER ANALYSIS OF THIS SWITCH WILL BE MADE AS REQUIRED.						

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DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

STATCH SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PFI DIF	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	A-1A-06-2721 FILL AND DRAIN VALVE ACTUATOR	FAR 27-02108-23	640317	FACTORY	YES STRATOS	691-17
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED WHEN IT FAILED TO OPERATE UPON INSTALLATION ON A VALVE AT THE 60/ C PRODUCT SUPPORT CENTER. FAR WAS NOT FINALIZED.						
CORRECTIVE ACTION-UNKNOWN.						
PROPELLION INTERFACE-A/B LOX FEED	A-1B-06-270P LOX FILL AND DRAIN VALVE, SWITCH	FAR 27-02108-23	640310	77E	FACTORY	YES STRATOS
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. VALVE FAILED TO CLOSE WHEN ENERGIZED. FAILURE CONFIRMED AND ISOLATED TO ACTUATOR CLOSING CIRCUIT LIMIT SWITCH. SWITCH FAILURE ATTRIBUTED TO SPRING PLATE AND LEAF SPRING BEING UNDERAC ED AND SOFT.						
CORRECTIVE ACTION-RRA-89-06-3697 ISSUED REQUESTING VENDOR CORRECTIVE ACTION IN PROBLEM AREA.						
PROPELLION INTERFACE-A/B LOX FEED	CT-98-06-D93C STAGING VALVE T BOLT	FAR 27-02108-23	135D 640216	36A/ETR	YES THICKOL HO 385342-1125-N	690814
FAILURE MODE-STRUCTURAL-CLAMP REJECTED FOR A BENT T BOLT, CAUSED BY OPERATING ROLLING. FAILURE ANALYSIS WAIVED BY CENTAU R RELIABILITY. SIMILAR CASE REPORTED ON FAR CT-98-06-094C.						
CORRECTIVE ACTION-NONE. FAILURE ANALYSIS WAIVED.						
PROPELLION INTERFACE-A/B LOX FEED	A-9R-06-265P LOX FILL AND DRAIN VALVE, SHAPY	FAR 27-02108-23	60F 640213	WALKER	NO STRATOS	690476
FAILURE MODE-STRUCTURAL-UNIT RECEIVED SUBSEQUENT TO LOSS OF VEHICLE. FAILURE OF ACTUATOR SHAFT CONCLUDED TO BE ACCO NDARY FAILURE AS RESULT OF UNIDENTIFIED OBJECT STRIKING THE ACTUATOR CONTROL MECHANISM COVER DURING THE EXPLOSION, TH EREBY CAUSING THE VALVE ACTUATOR ABST TO PIVOT ON ITS SUPPORTS WITH RESULTANT STRUCTURAL FAILURE.						
CORRECTIVE ACTION-NONE.						
PAGE 0026						

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DIFFICULTIES RELATED TO THE USE OF INFACE

SYSTEM SUB - SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE DIF TIME	PRI OTH	VENUE NAME VENDOR PART NO
PROPULSION INTERFACE-A/B LON FEED	6971983-1 LORAN/HAL/PME-VALVE, SEAL	UTP-PRT 27-02251-3	640013	FACTORY	NO	B. H. HADLEY NO 10711-3

FAILURE MODE-OUT OF SPECIFICATION DURING THE POST FLOW PROOF CYCLE THE VALVE WAS FOUND TO LEAK 6000 CC/MIN AT 30 PSI. EXAMINATION SHOWED THE BUTTERFLY SEAL HAD BEEN NICKED BY CONTACT WITH THE TEST SET-UP DUCTING. THIS WAS NOT A SPECIMEN FAILURE. MAX ALLOWABLE LEAKAGE IS 100 CC/MIN AT 30 PSI.

COFFEE-ELECTRIC ACTUATOR-STOP THE TEST AND ELIMINATE THE INTERFERENCE OF THE TEST DUCTLINE. VALVE RETURNED TO VENDOR FOR REPAIR.

PROPELLION INTERFACE-A/B 6841983 UTP-PRT 640212 FACTORY YES B.M. HADLEY
LOCK FEED 27-02251-3 NO 10713-3

FAILURE MODE-OUT OF TOLERANCE. AT 7060 GPM THE VALVE BUTTERFLY SHAFT FLUTTERED 0.25 DEGREES. MAX FLUTTER ALLOWED IS NONE. THE BUTTERFLY WAS LOCKED IN THE OPEN POSITION FOR THE AMBIENT DYNAMIC THAL CHECK.

CORRECTIVE ACTION-ECP 7856, APPROVED 4-16-65, CHANGES THE SPECIFICATION. FLUTTER UP TO 0.41 DEGREES IS PERMITTED.

PROPELLION INTERFACE-A/B
LOX FED

FAILURE MODE-FAIL DURING OPERATION. BOTH OPEN AND CLOSED POSITION INDICATOR LIGHTS WERE LIT, WITH VALVE IN OPEN POSITION. FAILURE ATTRIBUTED TO MARGINAL SWITCH UTILIZATION. ANTI-CHILL VALVE UNAFFECTED BY THIS FAULT. THIS IS AN OFFENDER.

CORRECTIVE ACTION-ECP 7430 APPROX REPLACING HAYDON POSITION INDICATING SWITCH P/N 8148 WITH P/N 8107 DEFEND MORE SUITABLE FOR THE OPERATIONAL ENVIRONMENT.

FAILURE MODE-CONTAMINATION. CORROSION EVIDENT DURING VALVE INSTALLATION AT COMPLEX 11. PROBLEM CONFIRMED. PRODUCT 1 ALUMINUM OXIDE. TIME OF OCCURRENCE AND ORIGIN OF CONTAMINATION UNDETERMINED.

CONNECTIVE ACTION-A PERSONNEL ADVISED TO SURRENTER FOR CONCERN OVER

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	QIF DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	A-9B-08-238F CHECK VALVE, SEAL, VENIER ENGINE SUPPLY	FAR 87-02405-1	9E 840119	ETR 040119	YES PARKER NO	1111-395729
	FAILURE MODE-LEAKAGE EXTERNAL; LEAKAGE AT CHECK VALVE/MANIFOLD INTERFACE DURING CHECK OUT TO T/P 27-93922 AT COMPLEX X 11. UNKNOWN AMOUNT OF LEAKAGE. FAILURE NOT CONFIRMED BUT SPECIFIC CAUSE UNDETERMINED. PROBABLE CAUSE WAS INADEQUATE SPECIFIED ASSY TORQUE TO INSURE K-SEAL INTEGRITY.					
	CORRECTIVE ACTION-OSTCOP 8041 RELEASED TO INCREASE INTERFACE ASSY TORQUE FROM 250 IN-LBS. TO 420 IN-LBS.					
PROPELLION INTERFACE-A/B LOX FEED	69A3027.1 LOX STAGING DISCONNECT VALVE	UTP-PET 87-02247-1 AND -3	840110 0723V	FACTORY NO 310722T AND 31 0723V	YES THICKOL NO	011701
	FAILURE MODE-OUT OF TOLERANCE. DURING THE EIGHTH OF 20 PET PROOF CYCLES IN LIFE TEST THE ENGAGED AND MISALIGNED TES T SPECIMEN LEAKED 1-13 SCIN PAST THE ENGAGEMENT SEAL WHILE PRESSURIZED TO 8 PSIG CHIE AND 11-5 SCIN. THE VALVE ABSOLUTELY O-RING WAS FOUND TO BE MISSING ALLOWING EXCESSIVE LEAKAGE WHEN MATED. REF. S/N 307-1607/307-1113. T.H. NO. 2.					
	CORRECTIVE ACTION-NONE. ADDITIONAL PRECAUTIONS WERE TAKEN TO INSURE THAT THE O-RING IS PROPERLY INSTALLED PRIOR TO EACH CYCLE. REF. FPR NR F-5045-3T.					
PROPELLION INTERFACE-A/B LOX FEED	69A3027.1 LOX STAGING DISCONNECT VALVE SEAL	UTP-PET 87-02248-1 AND -3	840108 0723V	FACTORY NO 310722T AND 31 0723V	YES THICKOL NO	082337
	FAILURE MODE-OUT OF TOLERANCE. DURING THE SIXTH OF 20 PET PROOF CYCLES IN LIFE TEST, THE ENGAGED AND MISALIGNED TES T SPECIMEN LEAKED 4 SCIN PAST THE ENGAGEMENT SEAL WHILE PRESSURIZED TO 20 PSIG AMBIENT GND. ALLOWABLE LEAKAGE IS 1 SCIN. REF. S/N 307-1607/307-1113 T.H. NO. 1.					
	CORRECTIVE ACTION-NONE. REF. F AND CD 984467 AND 984468. FPM NR F-5043 BT AND FPR NR. FR 634-2-116.					
PROPELLION INTERFACE-A/B LOX FEED	88A2568.3 SUBTAINER LOX START LINE	UTP-QUAL/PPT 87-02186-3	831120 07071	FACTORY NO	YES FLEXMETAL NO 10071	082337
	FAILURE MODE-LEAK EXTERNAL. DURING PPT LIFE TEST SPECIMEN LEAKED AT A SOLID-FLEX JUNCTION FOLLOWING 12,600 FLEX CYCLES WITH ONE AND 3000 FLEX CYCLES WITH LINE. 200 LINE CYCLES REMAINED IN THE TEST FOR COMPLETION. REF. S/N 312-0119 T. H. NO. 2.					
	CORRECTIVE ACTION-STOP TEST. AN ERROR IN CONDUCTING THE TEST MAY HAVE INDUCED FATIGUE FAILURE. PART ACCEPTED AS PAS SING PPT. REF. FPM NR F-502267 AND FPR NR 634-2-100.					

GENERAL DYNAMICS

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DIFFICULTIES REVIVING PROFOUND INTERFACE SYSTEMS - A UNISONALM

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PRI	VENOR NAME
	FAILED COMPONENT NAME	PART NUMBER	DATE DIF	TIME DIF	OTH	VENOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	69A268-1 SUSTAINER LOX START LINE	UTP-QUAL/PPT 87-02168-3	631115	FACTORY	YES	PLATEMETAL NO 10071

FAILURE MODE-LEAK-EXTERNAL. DURING PPT LIFE TEST, SPECIMEN LEAKED AFTER 65 FLEX CYCLES WITH LINE PRESSURIZED TO 750 PSIG. REF. S/N 302-0114 T. H. NO. 1.

CORRECTIVE ACTION-REJECT SPECIMEN. STOP TEST, OBTAIN REPLACEMENT SPECIMEN. VENDOR TO REVISE FABRICATION TECHNIQUE. REF. FPR MRF-3009 3T AND FPR NO. FR654-2-064.

PROPELLION INTERFACE-A/B LOX FEED	27A2124-3 LOX FILL AND DRAIN VALVE SWITCH	UTP-PET 27-02102-23	631114	FACTORY	YES	STRATOS NO 59-460

FAILURE MODE-ERRATIC OPERATIC. DURING PET LIFE CYCLE THE MICROMATCH INDICATING VALVE POSITIONS (OPEN OR CLOSED) OPERATED INTERMITTANTLY. REF. S/N 302-3071 T.H. NO 1.

CORRECTIVE ACTION-AN IMPROVED POSITION SWITCH IS BEING INCORPORATED ON ALL FUTURE PRODUCTION BY THE VENDOR. REF. FPR MR F-2023 SHT AND FPR NO FR 654-2-073.

PROPELLION INTERFACE-A/B LOX FEED	A-9B-08-256F CHECK VALVE/VERNIER ENGINE SUPPLY	FAR 87-02405-1	136F	ETRII	YES	PARKER NO 1111-99729

FAILURE MODE-STRUCTURAL. HAIRLINE CRACK IN BODY OF UNIT AT JUNCTION WITH SEALING SURFACE CRACK EXTENDED HALFWAY THRU COUGH VALVE BODY. ATTRIBUTED TO STRESS CORROSION. FAILURE UNCOVERED DURING INSPECTION SURVEY 120 AT COMPLEX 11. PAR A 499-06-216 DISCUSSES SIMILAR FAILURE.

CORRECTIVE ACTION-NONE AS DIRECT RESULT OF THIS REPORT. VALVE PREVIOUSLY REDESIGNED TO -3 CONFIGURATION PER ECP CAT 6401. CIC 0401, TO ELIMINATE THIS TYPE FAILURE MODE.

PROPELLION INTERFACE-A/B LOX FEED	69F1893-1 LOX MANUAL PRE-VALVE	UTP-PMT 27-02291-3	10713-3	FACTORY	YES	HADLEY NO

FAILURE MODE-OUT OF TOLERANCE. DURING A PROOF CYCLE AFTER THE VIBRATION SWEEP, INTERNAL LEAKAGE AT 30 PSI MEASURED 3000 CC/MIN. MAX ALLOWED LEAKAGE AT 30 PSI IS 1000 CC/MIN. LEAKAGE WAS ATTRIBUTED TO THE SCRAPER RING SCRAPPING THE DRY FILM LUBRICANT FROM THE VALVE BODY, WHICH PREVENTED THE SEAL FROM SEATING.

CORRECTIVE ACTION-NONE. STOP TESTING.

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF OTH	PRI VENDOR PART NO	VENOR NAME	STRATOS
AEROPULSION INTERFACE-AIR LOX FEED	6941958 LOX FILL AND DRAIN VALVE	UPF-ALT 87-001028-83	031018	FACTORY	YES	991600	NO 58-460

FAILURE MODE-OUT OF TOLERANCE. DURING PROOF CYCLE FOLLOWING ALT VIBRATION WITH THE VALVE FULL OF LNE AT 35 PSIG THE VALVE DID NOT CLOSE UNTIL THE SECOND TRIAL DURING WHICH RESPONSE TIME WAS 8.7 SECONDS VS 5 SECONDS ALLOWED. CORROSION ON BUTTERFLY SHAFT CAUSED VALVE TO STICK. REF. S/N 2017-3031 T-H. NO. 4.

CORRECTIVE ACTION-ECP38 TO CORRECT PROBLEM DISAPPROVED. TESTING DISCONTINUED. HARDWARE ACCEPTABLE FOR LIMITED PLANE USE. REF. RTEN NR F-4040-31 AND FAR NO. FN 054-2-032.

FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR LEAKAGE AT PITTING FERRULE. CAUSE WAS PITTING OF THE FLARED BEATING SURFACE AS RESULT OF AN UNDETERMINED CORROSION ELEMENT.

CORRECTIVE ACTION-NONE

PROPELLION INTERFACE-A/B A-85-08-244F FAN 32 NO
LAD FEED FIL AND DRAIN VALVE SWITCHES 87-0C102-23 69,000 FACTORY YES STRATO

FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR VALVE POSITION SWITCHES TO FUNCTION. THE VALVE-CLOSED SWITCH CONTACTS WERE WELDED TOGETHER AND THE VALVE-OPEN SWITCH CONTACT HOLDER LEAP SPRING WAS RELIABLY THROWN THROUGH. ABOVE WAS CAUSED BY AN APPLICATION OF EXCESS CURRENT TO THE SWITCHES.

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PROPELLION INTERFACE-A/B
LOX FEED 691956
LOX FILL AND DRAIN VALVE UTP-PAT
 27-02102-23

FAILURE MODE-OUT OF TOLERANCE. DURING PROOF CYCLE FOLLOWING PART SINE VIBRATION, THE VALVE WOULD NOT CLOSE UNTIL THE ARRIGNON ON BUTTERFLY SHAFT CAUSED VALVE TO STICK. REF. B&V 807-3031 T.H. NO. 2.

**CORRECTIVE ACTION-ECP 7569 TO CORRECT PROBLEM DISAPPROVED. TESTING DISCONTINUED. REF. RTFM NR P-4056 ST AND PAR NO.
PA 654-2-032.**

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DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	TP-69A1963-1 LOXMANUALPRE-VALVE,BOLT	UTP-PRT 27-02851-3		630912	FACTORY NO	YES B.H. HADLEY NO

FAILURE MODE-STRUCTURAL. ONE OF THE FOUR LOCKING BOLTS SEIZED WHILE BEING REMOVED PRECEDING A PROOF CYCLE.

CORRECTIVE ACTION-REMOVE SEIZED BOLT AND CONTINUE TESTING WITH THREE BOLTS. BOLTS AND HOUSING ARE STEEL. NO LUBRICANT WAS CALLED OUT. DRY-LUBED BOLTS WILL BE USED IN FUTURE.

PROPELLION INTERFACE-A/B LOX FEED	A-99-06-237F FILL AND DRAIN VALVE-ACTUATOR	FAR 27-02102-23	113F	FACTORY 630921	YES STRATOS NO 59-460

FAILURE MODE-FAIL TO OPERATE. UNIT REJECTED FOR FAILURE OF VALVE OPEN POSITION SWITCH TO FUNCTION. REASON FOR MALFUNCTION WAS IMPROPER ADJUSTMENT OF THE ACTUATOR TRAVELER RESULTING IN INSUFFICIENT MOVEMENT TO ACTUATE THE SWITCH.

CORRECTIVE ACTION-VENDOR PERSONNEL WERE INSTRUCTED TO EXERCISE GREATER CARE IN ADJUSTING THE ACTUATORS.

PROPELLION INTERFACE-A/B LOX FEED	A-99-06-239F FILL AND DRAIN VALVE SWITCH	FAR 27-02102-23	109F	FACTORY 630921	YES STRATOS NO 59-460

FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT REJECTED FOR FAILURE OF THE VALVE-CLOSED LIGHT TO FUNCTION. SHIFTING OF THE FIBER GLASS INSULATOR, BETWEEN THE LEAF SPRING PIVOT PLATE AND THE NORMALLY OPEN CONTACT HOLDER SUSPECTED AS CAUSE OF FAILURE.

CORRECTIVE ACTION-VENDOR DID NOT CONCUR WITH ABOVE FAILURE CAUSE, BUT ADVISED THE FIBER GLASS INSULATOR HAD BEEN CHANGED TO CERAMIC.

PROPELLION INTERFACE-A/B LOX FEED	69F-1963-1 LOXMANUALPRE-VALVE,SEAL	UTP-PRT 27-02851-3	630730	FACTORY NO	YES B.H. HADLEY NO

FAILURE MODE-LEAK. EXTERNAL LEAKAGE PAST THE BLIND END SHaFT SEAL OF THE BUTTERFLY SHAFT. LEAKAGE IN EXCESS OF 3000 CC/MIN(0.1 CC/MIN ALLOWED). LEAKAGE OCCURRED UNDER A STATIC PRESSURE OF 120 PSIG. EXAMINATION BY THE VENDOr SHOWED THAT IN ONE AREA THE TEFLON SEAL HAD TAKEN A PERMANENT SET. THE DEFORMATION WAS CAUSED BY THE SEAL INSTALLATION TECHNIQUE.

CORRECTIVE ACTION-THE SEAL WAS REPLACED AND THE UNIT WAS RETURNED TO TEST.

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GENERAL DYNAMICS

DIRECT AND INDIRECT INTERFACIAL POLYMERIZATION

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	69F1908-1 LOX START TANK FILL HOSE ASSY	UTP-SLT 87-02849-1	630716 FACTORY	YES FLEX METAL HOSE	NO E	691698
					HS 578-1	
	FAILURE MODE-LEAK, EXTERNAL. THE LEAKAGE OCCURRED AT A POINT WHERE THE FLEXIBLE BRAID JOINS THE RIGID TUBING. HOSE WAS BEING VIBRATED AT 6 CPS WITH A PRESSURE OF 140 PSIG AT 300 DEG F. THE UNIT WAS SPURTING LIQUID NITROGEN. SPECIFICATION STATES THERE SHALL BE NO EXTERNAL LEAKAGE.					
	CORRECTIVE ACTION-STOP TEST. ECP 7380 REPLACES THE EXISTING STRIP-WOUND HOSE WITH ONE OF ANNUAL BELLOWS CONSTRUCTION. ECP WAS APPROVED ON JANUARY 20, 1984.					
PROPELLION INTERFACE-A/B LOX FEED	69F1908-1 LOX START TANK FILL HOSE ASSY	UTP-PMT 87-02849-1	630716 FACTORY	YES FLEX METAL HOSE	NO E	691698
					HS 578-1	
	FAILURE MODE-LEAK-EXTERNAL. THE LEAKAGE OCCURRED AT A POINT WHERE THE FLEXIBLE BRAID JOINS THE RIGID TUBING. HOSE WAS BEING VIBRATED AT 5 CPS WITH A PRESSURE OF 140 PSIG AT 300 DEG F. THE UNIT WAS SPURTING LIQUID NITROGEN. SPECIFICATION STATES THERE SHALL BE NO EXTERNAL LEAKAGE.					
	CORRECTIVE ACTION-STOP TEST. ECP 7380 REPLACES THE EXISTING STRIP-WOUND HOSE WITH ONE OF ANNUAL BELLOWS CONSTRUCTION. ECP WAS APPROVED ON JAN 26, 1984.					
PROPELLION INTERFACE-A/B LOX FEED	SP-19-06-238F PREVALVE HANDLE LOCKING BOLT	FAR	126D 630702	FACTORY YES	NO	692094
	FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR FAILED BOLT AS A RESULT OF OVERTORQUEING.					
	CORRECTIVE ACTION-60/C FACTORY PERSONNEL INFORMED OF FAILURE AND INSTRUCTED TO PROPERLY TORQUE BOLTS.					
PROPELLION INTERFACE-A/B LOX FEED	SP-A9-09-231C BOOSTER STAGING VALVE SHAFT-SEAL	PAR 87-239319-009	24E 630917	FACTORY YES 60/C	NO	694911
	FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR LEAKAGE FROM THE SHAFT SEAL. NO FAILURE ANALYSIS PERFORMED. PART RECEIVED.					
	CORRECTIVE ACTION-HOSE. NO FAILURE ANALYSIS PERFORMED.					

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**GENERAL DYNAMICS
CONVAIR DIVISION**

15 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF	PRI TIME DIF	OTR VENDOR PART NO	VENDOR NAME
PROPELLION INTERFACE-A/B LOX FEED	SP-99-06-283F BOOSTER PROP., VALVE HOSE BELLOWS	FAR 27-02164-3	030423	FACTORY	YES	ANACONDA NO	696180
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR AN EXTERNAL LEAK, WHICH ORIGINATED IN A CRACK IN THE BELLOWS SEAM WELD. THE CRACK WAS CONSIDERED THE RESULT OF STRESS CORROSION CAUSED BY RESIDUAL BRAZING FLUX AND FORMING STRESSES. 1 OTHER CASE REPORTED IN FAR SPV-A/B-06-283F.							
CORRECTIVE ACTION-VENDOR REVISED PROCESSING PROCEDURE TO REMOVE FLUX RESIDUE.							
PROPELLION INTERFACE-A/B LOX FEED	A-99-06-212F TOPPING LINE	FAR 27-21507-1	135F	EVR	YES	60/C NO	696180
FAILURE MODE-STRUCTURAL. TWO LINES REJECTED FOR BEING COLLAPSED. FAILURE CONFIRMED AND ATTRIBUTED TO IMPROPER FABRICATION, HANDLING AND TRANSPORTATION IN THE SOFT RATHER THAN T-6 CONDITION. ADDITIONAL CASE REPORTED ON FAR-A-BD-06-236.							
CORRECTIVE ACTION-FABRICATION, INSPECTION AND HANDLING TECHNIQUES REVISED TO ALLEVIATE ABOVE PROBLEM.							
PROPELLION INTERFACE-A/B LOX FEED	A-99-06-213F VALVE, FILL AND DRAIN, AIRBORNE-SE	FAR 27-02102-020 AL	136D	FACTORY	YES	AIRESEARCH NO	696180
FAILURE MODE-LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE, WHICH WAS CONFIRMED AND ATTRIBUTED TO A SURFACE DEFECT IN THE BUTTERFLY SEAL.							
CORRECTIVE ACTION-VENDOR PERSONNEL HAVE BEEN CAUTIONED TO EXERCISE GREATER CARE TO PREVENT DAMAGE TO THE SEAL.							
PROPELLION INTERFACE-A/B LOX FEED	HG-99-06-207P FILL AND DRAIN VALVE	FAR 27-02102-020	130D	EVR	YES	AIRESEARCH NO	696180
FAILURE MODE-CONTAMINATION. UNIT REJECTED FOR SIGNS OF CONTAMINATED. CONTAMINATION CONFIRMED AND ATTRIBUTED TO INADequate PACKING AND PACKAGING FOR LONG TIME STORAGE, BY THE VENDOR.							
CORRECTIVE ACTION-RECOMMENDED REVISION OF VENDORS CLEANING AND PACKAGING SPECIFICATION AND APPROVAL BY 60/C. SPARE VALVES WERE SURVEYED FOR THIS CONDITION.							

15 JUN 1986

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI	VENDOR NAME
PROPELLION INTERFACE-A/B LOX FEED	A-99-06-202F BOOSTER STAGING VALVE	FAR 27-22006-3	630288	FACTORY	YES NO	896489

FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR EXCESSIVE CLOSING TORQUE. FAILURE CONFIRMED AND ATTRIBUTED TO INTE RERENCE BETWEEN BUTTERFLY AND VALVE BODY, DUE TO THE BUTTERFLY NOT BEING CENTERED IN THE VALVE OPENING. 1 OTHER IDE NTICAL CASE OF FAR A-99-06-202F.

CORRECTIVE ACTION-NONE. SINCE VALVE WAS TESTED WITH THE ACTUATOR SHAFT IN A VERTICAL POSITION, WHICH IS NOT 174 FLI GHT ATTITUDE, VALVE MECHANISM WAS DESIGNED TO WITHSTAND 2000 IN. LBS., ONLY 120 IN. LBS. REQUIRED TO CLOSE THIS VALV E.

PROPELLION INTERFACE-A/B LOX FEED	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI	VENDOR NAME
PROPELLION INTERFACE-A/B LOX FEED	A-99-06-310CF ELBOW FITTING-TOPPING LINE	FAR 27-23563-7	163D 630212	FACTORY	YES NO	897728

FAILURE MODE-LEAK-INTERNAL. THREE UNITS REJECTED FOR INTERNAL LEAKAGE DURING PRESSURE TEST. ALL UNITS LEAKED WHEN P RESSURIZED WITH HELIUM. CAUSE WAS A CONTINUOUS PATH OF TITANIUM CARBIDES IN THE 321 STEEL, WHICH IS INDICATIVE OF PO OR QUALITY BAR STOCK.

CORRECTIVE ACTION-INSPECTION PROCEDURES FOR ULTRASONIC INSPECTION REVIEWED AND CONSIDERED ADEQUATE IF PROPERLY APPL IED. INSPECTION PERSONNEL WERE MADE AWARE OF PROBLEM.

PROPELLION INTERFACE-A/B LOX FEED	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI	VENDOR NAME
PROPELLION INTERFACE-A/B LOX FEED	HG-99-06-163F PREVALVE,SEAL	FAR 27-02251-3	152D 621210	FACTORY	YES NO	899249

FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL AND EXTERNAL LEAKAGE. INTERNAL LEAKAGE ONLY CONFIRMED AND RESULTED FRO M A LARGE INDENTATION IN THE TEFLON SEAL ON THE BUTTERFLY.

CORRECTIVE ACTION-NONE. VENDOR DENIED LIABILITY FOR THE SEAL DAMAGE SINCE LEAKAGE WAS WITHIN SPECIFICATION WHEN ACC EPTED.

PROPELLION INTERFACE-A/B LOX FEED	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI	VENDOR NAME
PROPELLION INTERFACE-A/B LOX FEED	A-99-06-180F STAGING VALVE SEAL	FAR 27-22006	75E 621130	FACTORY	YES NO	896192

FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR LEAKAGE AT THE ACTUATOR SHAFT. FAILURE CONFIRMED AND ATTRIBUTED TO A SCRATCHED KEL-F LIP SEAL. 3 ADDITIONAL CASES REPORTED ON FAR A-99-06-219F.

CORRECTIVE ACTION-GO/C PERSONNEL INVOLVED IN THE MANUFACTURE OF THE VALVE WERE CAUTIONED TO USE EXTREME CARE IN MAC HINING AND INSPECTION OF CRITICAL CHAMFER AND RADIUS AREAS ADJACENT TO THE SEAL.

GENERAL DYNAMICS
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI DIF OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	A-90-06-167F V/E TUBE & NUT	FAR 87-24008-1	83F 021126	WTR	YES DEUTCH NO	899246
FAILURE MODE-OUT OF TOLERANCE. UNIT REJECTED FOR A ϕ NUT EXTERIOR PLAM. EXAMINATION REVEALED AN INECTION ON A PL AT WHICH OCCURRED PRIOR TO BLUE ANODIZING THE PART.						
CORRECTIVE ACTION-NONE. SINCE THE PARTICULAR VENDOR, THE DEUTSCH COMPANY, IS NO LONGER AN APPROVED VENDOR.						
PROPELLION INTERFACE-A/B LOX FEED	A-88-01-174F DRAIN TUBE SLEEVE	FAR 27-24011-71	75F 021119	SYC.	YES 60/C NO	899246
FAILURE MODE-STRUCTURAL-UNIT REJECTED FOR A CRACKED SLEEVE. FAILURE CONFIRMED AND ATTRIBUTED TO USE TYPE 303 STAINLESS STEEL WHICH WILL NOT WITHSTAND HIGH STRESSES IN THE TRANSVERSE DIRECTION. THIS IS IDENTICAL TO THE B-NUT CRACKIN G PROBLEM. SIMILAR CASE REPORTED IN FAR CT-A9-06-126.						
CORRECTIVE ACTION-MIL-F-9309A, AMEND. 7, RELEASED JAN. 1963, WHICH ELIMINATES USE OF TYPE 303 STAINLESS STEEL FOR T DRAIN SLEEVES.						
PROPELLION INTERFACE-A/B LOX FEED	A-99-03-174F FILL AND DRAIN VALVE SWITCH	FAR 27-020102-23	134F 021116	FACTORY	YES STRATOR NO	899246
FAILURE MODE-FAIL DURING OPERATION. UNIT REJECTED FOR INDICATING OPEN AND CLOSED SIMULTANEOUSLY. FAILURE CONFIRMED AND ATTRIBUTED TO VALVE-CLOSED MICROSWITCH, WHICH DID NOT OPEN WHEN THE PLUNGER WAS RELEASED. THIS WAS CAUSED BY EXCESSIVE FRICTION BETWEEN THE RUBBER SEAL AND THE SWITCH PLUNGER.						
CORRECTIVE ACTION-VENDOR TO SUBJECT ACTUATORS AND SWITCHES TO ADDITIONAL TESTING PRIOR TO INSTALLATION IN THE VALUE S.						
PROPELLION INTERFACE-A/B LOX FEED	A-88-01-173 TOPPING CHECK VALVE	FAR 87-020101-001	75F 020127	SYC	YES J. O. LEONARD NO	899246
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE. FAILURE CONFIRMED AND ATTRIBUTED TO A CRACK IN THE VALVE BODY DUE TO STRESS CORROSION OF 2024-T4 ALUMINUM ALLOY.						
CORRECTIVE ACTION-THIS VALVE TO BE REPLACED BY PIN 27-G2005-1 WHICH IS MADE OF 6061-T6 ALUMINUM ALLOY, AUTHORIZED BY OST ECP8403, A PART OF TCP1417.						
						PAGE 0037

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GENERAL DYNAMICS
CONVAIR DIVISION

PROPELLION INTERFACE-A/B LOX FED		TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM SUB-SYSTEM	A0182-0047/P1-001-00-00 PUMP-TURBO	QUANTUM	87	11/21/16	YES	NO	120116

FAILURE MODE-OUT OF SPECIFICATION. BI LOX PUMP INLET TEMPERATURE OF -261 DEG F EXCEEDED REDLINE VALUE OF -262 DEG F
CAUSE UNKNOWN.

SYSTEM EFFECT - NONE.

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699244
PROPELLION INTERFACE-A/B
A/B TOPPING RINE-OFF DISCONNECT
FAR 27-21508-11
73F 622811
BYC. YES
NO

FAILURE MODE-LEAK-EXTERNAL, UNIT REJECTED FOR EXTERNAL LEAKAGE PAST THE SEAL. FAILURE CONFIRMED AND ATTRIBUTED TO CORROSION BENEATH THE ANODIC HARDOATING, WHICH DESTROYED THE PROBE SEALING SURFACE.

COGNITIVE-CORRECTIVE ACTION-ITEMS PROPOSED BY CUSTOMER.

610218
PROPELLION INTERFACE-A/B A-93-06-164 FAIR 16F FACTORY YES
STAGNATION VALVE, SEAL
LOX FEED 27-22006 NO
620030

FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE FROM THE ACTUATING SHAFT SEAL CONFIRMED AND ATTRIBUTED TO USE OF TRICHLOROETHYLENE CLEANING SOLVENT AND AN OPEN BASE.

CORRECTIVE ACTION-MPS REVISED TO REQUIRE FREON T-F CLEANING SOLVENT AND AN OVEN BAKE AT 105° F INSTEAD OF 250° F TO REPAIR LIP SEAL DAMAGE DURING CLEANING.

PROPULSION INTERFACE-A/B
A-9D-02-0207
TURBINE-PREVALVE
NO FEED

INTERNAL-LEAKAGE MODE-LEAK-EXTERNAL-LEAKAGE BETWEEN MATING FLANGES OF LOX PREVALVE AND THE FILL AND DRAIN LINE AND THE SEALS FAILURE IS DUE TO CONTAMINATION IN THE FLANGE GROOVES WHICH PREVENTED AN EVEN SEALING SURFACE FOR THE SEAL. THE SEAL IS A METAL O RING SHAPED LIKE A TORUS. IT CONTAINED MANY PIT MARKS AROUND COMPLETE PERIPHERY OF SEAL.

CORRECTIVE ACTION-1. GO/A ALERTED FIELD PERSONNEL TO THE HAZARD OF CONTAMINATION AND THE NECESSITY OF CLEANLINESS A
INSTALLATION, PER TWO SANVAN 9-945. 2. FACTORY PERSONNEL WERE ALERTED TO THE HAZARDS, BY AVO ON 11/23/82. S. DATA
HAS TRANSMITTED FOR OPERATIONAL TECHNICAL ORDER USAGE.

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GENERAL DYNAMICS CORPORATION

DISPENSING REVIEW AND INTERFACIAL INTEGRATION

SYSTEM SUB-SYSTEM		TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE CIV/OTH	PRI VENDOR PART NO	YES PARKER NO
PROPULSION INTERFACE-A/B LOX FEED	A-98-08-175C V/E CHECK VALVE			FAN 27-08401-1	6020122 WTR		

FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR LEAKAGE AT UPSTREAM END FITTING. NO FAILURE ANALYSIS PERFORMED SINCE PART WAS REWORKED AT THE PRODUCT SUPPORT CENTER AND RETURNED TO STOCK.

CORRECTIVE ACTION-NOT KNOWN. NO FAILURE ANALYSIS PERFORMED.

PROPELLION INTERFACE-A/B
A-9L-09-162
A/B FILL AND DRAIN VALVE MOTOR
LOW FEED

FAILURE MODE-FAIL DURING OPERATION. VALVE REJECTED FOR INTERMITTENT OPERATION. FAILURE CONFIRMED AND ATTRIBUTED TO UNUSUALLY LOW FRICTION AND WINDAGE LOSSES IN THE MOTORS, RESULTING IN LOWER THAN ANTICIPATED POWER CONSUMPTION IN THE NO-LOAD CONDITION. THE ATTENDANT LOAD CURRENT WAS INSUFFICIENT TO HOLD THE SPRING-LOADED BRAKE AWAY FROM THE BRAKE DISC. TWO OTHER VALVES FROM SABCO AND BYCARE HAD THE SAME PROBLEM, REPORTED IN THIS FAIR.

REASON: THE VENDOR REQUESTED TO MAKE A DESIGN CHANGE TO PREVENT DEFICIENCIES.

PROPULSION INTERFACE-A/B A-9D-06-112
LOR FEED V/E LINE B-MAT.

FAILURE MODE-LEAK-EXTERNAL UNIT REJECTED FOR EXTERNAL LEAKAGE AT THE FLARED FITTINGS. LEAKAGE CONFIRMED AND ATTRIBUTED TO INSUFFICIENT BOND TORQUE.

COLLECTIVE ACTION-FACTORY IN BOSNIA AND HERZEGOVINA: THE STRUGA TO OVERCOME INDIVIDUALISM AND ISOLATION REQUIREMENTS

PROPELLION INTERFACE-A/B AE61-0063/P4-001-00-107 FLIGHT 107D QM0524 19C YES
LOX FEED LOX LINE

FAILURE MODE-EXTERNAL LEAK IN VICINITY OF LOX PLUMBING IN QUAD 1, FIRST INDICATED BY A DROP IN MEASUREMENT HSP, V/S HYDRAULIC PRESSURE, CAUSED BY FREEZING OF SEALE LINE.

VEHICLE EFFECT-NONE. SENSE LINE TO MEASUREMENT HEEP BECAME FROZEN GIVING ERONEOUS INDICATION OF ZERO V/S SYSTEM AT HYDRAULIC PRESSURE. ALSO AS 3 HYDRAULIC PRESSURE SWITCH NUMBER 2 BECAME FROZEN GIVING ERONEOUS ALERT SIGNAL. LATERN NOT EFFECTIVE DUE TO REDUNDANT (SWITCH NUMBER 1 DID NOT GIVE ALERT SIGNAL).

CORRECTIVE ACTION - PROPOSED A CHANGE OF IMMINATION MATERIALS AND SHADING OF ARMOR LUMPS

CENTRAL DYNAMIC CONVERSATION

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DIFFICULTIES REVIEW-PROPELLION INTERFACE

SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRY OTH	VENDOR NAME VENDOR PART NO
-UB - SYSTEM			FAN	620593	MTR	NO 60/C NO

FATIGUE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE AT THE ACTUATOR SHAFT SEAL. SEAL REPLACED AT MFR. DI
SCHREIBER SEAL RETURNED TO SAN DIEGO. EXAMINATION SHOWED THE SEAL NOT TO BE AT FAULT.

CORRECTIVE ACTION-NONE. FAILURE NOT CONFINED.

PROPELLER 1 INTER-AC-1-A/B MC-3B-08-15B TAR 10-TD YES SPECIALTY PROD
LOCK FIELD STAGING VALVE, BOLY 610-4-62-1282 ETR 1.20317 NO LCTS

FAILURE MODE OUT OF TOLERANCE. UNIT REJECTED FOR HAVING BENT AND DAMAGED THREADS. INVESTIGATION CONCLUDED PROBLEM WAS AS THE RESULT OF IMPROPER INSTALLATION.

CORRECTIVE ACTION-FACTORY PERSONNEL INSTRUCTED TO FOLLOW MPS INSTALLATION INSTRUCTIONS EXACTLY.

PROPULSION INTERFACE-A/B A-90-06-126
VALVE CHECK-TOP 116
LOX FEED

FAILURE MODE-CONTAMINATION. UNIT REJECTED DURING RECEIVING INSPECTION FOR INTERNAL LEAKAGE, WHICH WAS CONFIRMED IN FAILURE ANALYSIS. LEAKAGE WAS CAUSED BY A METAL PARTICLE EMBEDDED IN THE POPPET SEAL.

CORRECTIVE ACTION-REQUESTED WIN TO TAKE ACTION TO INSURE LOX SYSTEM CLEANLINESS. QC REVISED EOP 415.134A TO INCLUDE SPECIFIC REVERSE-FLOW LEAK TESTS, WHICH WAS TO BE PERFORMED ON ALL E AND F MISSILES IN THE FACTORY PRESHIPIPMENT AREA

FOR STARTING TORQUE CAUSED BY A DIRTY COMMUTATOR. MAIN CLEANED VALVE FUNCTIONED SATISFACTORILY.

COMMISSIONER OF DOMESTIC REVENUE SERVICE

19 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	A-8L-QS-135 FILL AND DRAIN VALVE SWITCH	FAR 27-08102-23	820314	LAFB	YES STRATOS	088727
<p>FAILURE MODE-FAIL DURING OPERATION, UNIT REJECTED FOR FAILURE TO INDICATE VALVE POSITION WHEN AT CRYOGENIC TEMPERATURE. FAILURE CONFIRMED AND ISOLATED TO THE NORMALLY OPEN SWITCH, HAYDON NO. 9148, WHICH WOULD NOT FUNCTION PROPERLY AT MINUS 50 DEGREES F. AT THAT TEMPERATURE THE SPRING WOULD NOT RESET, INDICATING THE SPRING CONSTANT CORRECTIVE ACT IOM-VENDOR 1 IM OVED INSPECTION TECHNIQUES TO ASCERTAIN QUALITY OF SWITCHES.</p>						
<p>CORRECTIVE ACTION-VENDOR IMPROVED INSPECTION TECHNIQUES TO ASCERTAIN QUALITY OF SWITCHES.</p>						
PROPELLION INTERFACE-A/B LOX FEED	A-88-08-134 VALVE, FILL AND DRAIN	FAR 27-08102-23	820310	SYC.	YES STRATOS	088228
<p>FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE PAST THE BUTTERFLY. LEAKAGE CONFIRMED AND CAUSED BY TWO SMALL SCRATCHES ON THE VALVE SEAT. LEAKAGE RATE WAS .002CC PER MINUTE VERSUS .001CC PER MINUTE MAXIMUM ALLOWABLE.</p>						
<p>CORRECTIVE ACTION-NONE.</p>						
PROPELLION INTERFACE-A/B LOX FEED	A-88-08-137 VALVE, FILL AND DRAIN, AIRBORNE	FAR 27-08102-23	820309	SYC.	YES STRATOS	088228
<p>FAILURE MODE-STRUCTURAL-UNIT REJECTED FOR CRACKS ADJACENT TO A WELD. FAILURE CONFIRMED BY VISUAL EXAMINATION. CAUSE ATTRIBUTED TO INADEQUATE WELDING AND INSPECTION TECHNIQUES. XRAY REQUIREMENTS WERE ESTABLISHED IN DECEMBER 1960, HOWEVER, THIS VALVE WAS ACCEPTED IN AUGUST 1960, THEREFORE RECEIVED NO XRAY INSPECTION.</p>						
<p>CORRECTIVE ACTION-A SURVEY OF THE VENDORS WELDING, TESTING AND INSPECTION PROCEDURES WERE FOUND TO BE SATISFACTORY. SINCE XRAY PROCESSES HAD BEEN ESTABLISHED AFTER ACCEPTANCE OF THIS VALVE NO FURTHER ACTION TAKEN. ALL VALVES UNDER E&C CONTROL, AND NOT INSTALLED, WERE SURVEYED AND INSPECTED VISUALLY AND BY X-RAY.</p>						
PROPELLION INTERFACE-A/B LOX FEED	A-88-08-144 CHECK VALVE SEAL-1/4"	FAR 27-082408-1	820426	SYC.	YES PARKER	088468
<p>FAILURE MODE-LEAK EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE FROM THE VALVE BODY-HEX NUT INTERFACE. LEAKAGE COMPRESSED AND ATTRIBUTED TO PRESENCE OF THREAD LUBE AND FALLING IN THE LEAKAGE AREA. & IDENTICAL CASES REPORTED ON FAR 8D -08-148, -081.</p>						
<p>CORRECTIVE ACTION-VENDOR REDESIGNED THE VALVE TO INCLUDE A TEFLON GASKET IN THE QUESTIONED JOINT.</p>						

13 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER TAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIFF	SITE TIME DIFF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	A-9D-06-154 TOPPING HOSE BELLOWS	FAR 27-233580-1	13F 820421	WTR 6/6/68	YES NO	YES COSMIC CORP. NO
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR EXTERNAL LEAKAGE FOLLOWING A DPL. LEAKAGE CONFIRMED AND ATTRIBUTED TO A ONE AND ONE HALF INCH LONG CRACK AT THE BOTTOM OF A CONVOLUTION, CAUSE BY FATIGUE DEVELOPED AT A TOOL MARK IN THE MATERIAL.						
CORRECTIVE ACTION-VENDOR TO POLISH THEIR FORMING DIES TO PRECLUDE MARKING THE BELLOWS.						
PROPELLION INTERFACE-A/B LOX FEED	A902-0009/02-6HO-03-13 B1 TOPPING-LINE CHECK VALVE GASKET	COMPOSITE-FRO/DPL 820421	13F 820421	6/WTR NO	YES	090861
FAILURE MODE-LEAK EXTERNAL IN THE B1 TOPPING LINE CHECK VALVE GASKET.						
SYSTEM EFFECT-NONE - (LOW TEMPERATURE ENVIRONMENT NEAR THE B1 HYPERGOL CARTRIDGE).						
VEHICLE EFFECT-NONE - (LOW TEMPERATURE ENVIRONMENT NEAR THE B1 HYPERGOL CARTRIDGE).						
CORRECTIVE ACTION-GASKET WAS REPLACED.						
PROPELLION INTERFACE-A/B LOX FEED	A90-06-141 FILL AND DRAIN VALVE SHAFT	FAR 27-02102-23	12F 820416	WTR NO	YES STRATOS	090831
FAILURE MODE-FAIL TO CEASE TO OPERATE. UNIT REJECTED FOR FAILURE TO CLOSE DURING A VALIDATION PROCEDURE. SAME PROBLEM OCCURRED WITH THIS VALVE ON VEHICLE 9F AT SAFB EARLIER DURING VALIDATION. FAILURE CONFIRMED-AT CRYOGENIC TEMPERATURE. LURES THE BUTTERFLY SEIZED AS RESULT OF CORROSION IN THE SHAFT & WING BORES CAUSED BY ELECTROLYTIC ACTION BETWEEN DI SIMILAR METALS. A TOTAL OF 9 VALVES HAVE HAD THIS PROBLEM TO DATE.						
CORRECTIVE ACTION-DESIGN CHANGE RECOMMENDED TO ELIMINATE THE B1-METALLIC CORROSION PROBLEM. VALVES IN THE FIELD WERE CHECKED FOR THIS CONDITION.						
PROPELLION INTERFACE-A/B LOX FEED	A-9A-06-122 VALVE CHECK-LOX TOPPING	FAR 27-02501-5	FACTORY 820417	YES LAMAGAN NO		090877
FAILURE MODE-OUT OF TOLERANCE. SEVEN UNITS CHECKED AT THE Q/C SUPPORT DEPOT WERE REJECTED FOR LOW CRACKING PRESSURE. NO FAILURE ANALYSIS CONDUCTED, SINCE VALVES ARE OBSOLETE AND REPLACED BY THE -803 VALVE.						
CORRECTIVE ACTION-HOME.						
PAGE 0042						

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GENERAL DYNAMICS

DIFFICULTIES REVIEW-PROPOSITION INTERFACE SYSTEM-AIRBORNE

18 JUN 1988

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	A-BB-06-108 DISCONNECT, LOX TAPPING RISER OFF-A 27-21508-11 IRBORNE	FAR 820217	SYC.	YES CONVAIR NO		000398
	FAILURE MODE-CANTAMINATION-UNIT REMOVED DURING ROUTING INSPECTION FOR BEING CORRODED AND PITTED. PROBLEM CONCLUDED TO BE RESULT OF A POROUS HARD COAT AND THE CHARACTERISTICS OF 2024 DURAL TO BE PRONE TO INTERGRANULAR ATTACK WHEN NOT PROTECTED.					
	CORRECTIVE ACTION-CHANGE PROBE MATERIAL TO 6061 DURAL AND IMPROVE CONTROL OF THE HARD COATING PROCESS. ALL CURRENT TYPE PROBES TO BE INSPECTED FOR ABOVE CONDITIONS.					
PROPELLION INTERFACE-A/B LOX FEED	AB-BB-113 W/ LOX SUPPLY CHECK VALVE B NUT	FAR 27-02403-3	820215	ETR	YES PARKER NO	000490
	FAILURE MODE-EXTERNAL LEAK- UNIT REJECTED FOR LEAK FROM A CRACKED HEX NUT. FAILURE ATTRIBUTED TO OVER-TORQUING OF ASSEMBLY BY VENDOR.					
	CORRECTIVE ACTION-VENDOR REINSTRUCTED THEIR PERSONNEL ON TORQUE REQUIREMENTS DURING ASSEMBLY.					
PROPELLION INTERFACE-A/B LOX FEED	A-BB-06-112 ASSEMBLY BELLOWS	FAR 27-823560-1	820212	ETR	YES CONVAIR NO	000491
	FAILURE MODE-EXTERNAL LEAK- UNIT REJECTED FOR LEAK OF GNE DURING CHECKOUT. ANALYSIS REVEALED A CRACK IN THE BELLOWS SECTION. IT WAS CONCLUDED CRACK WAS A FATIGUE FAILURE CAUSED BY HOSE BEING BENT IN A TOO SMALL RADIUS AS RESULT OF MISHANDLING.					
	CORRECTIVE ACTION-MORE.					
PROPELLION INTERFACE-A/B LOX FEED	A-BB-06-088 LINE ASSEMBLY, TWO INCH INLET	FAR 27-81507-1	SEE 820105	ETR	YES CONVAIR NO	000382
	FAILURE MODE-STRUCTURAL-LINE REMOVED AFTER A LOX TANKING OPERATION FOR BEING PARTIALLY COLLAPSED AT TWO OF FOUR BENDS. THE CONDITION WAS ATTRIBUTED TO HANDLING DAMAGE DURING TRANSPORTATION OR ERECTION.					
	CORRECTIVE ACTION-FIELD PERSONNEL INFORMED OF CONCLUSIONS AND ADVISED TO USE CARE IN HANDLING.					

RAAF 000382

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GENERAL STATISTICS

DIFFICULTIES REVIEWED IN THE USE OF THE DIFFICULTY INDEX

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENOR NAME VENOR PART NO
PROPELLION INTERFACE-A/B LOW FEED	98-06-084 VALVE, FILL AND DRAIN LINE ASSEMBLY	FAN 9700100-000	618702 ETR	NO	YES	AIRSEARCH

FAILURE MODE-LEAK-EXTERNAL LEAKING AT THE VALVE SHAFT BEARING COVER. THE SEAL AREA UNDER THE COVER, WAS COATED WITH SOLIDIFIED OXYLUBE, WHICH HAD AGED AND CRACKED.

CORRECTIVE ACTION-VENDOR ALERTED HIS INSPECTION PERSONNEL TO THE PROBLEM OF APPLYING AN EXCESS AMOUNT OF LUBRICANT.

PROPELLION INTERFACE-A10
LOW EFCO 98-06-064
MAN. FWD. AND REARW. AIRBORNE FAR
NO ALEREARCH 899048

FAILURE MODE-LEAK-EXTERNAL-LEAKAGE AT THE VALVE SHAFT BEARING OEM: THE SEAL AREA UNDER THE COVER WAS COATED WITH BO LIQUIDITY OXYLUB WHICH HAD AGED AND CRACKED.

CORRECTIVE ACTION-VENDOR ALERTED HIS INSPECTION PERSONNEL TO THE PROBLEM OF APPLYING AN EXCESS AMOUNT OF LUBRICANT.

PROPELLION INTERFACE-A/B A-9D-06-107 FAR 3F 30 NO YES FLEXIBLE METAL 000191
LOX FED V/F HOMI ALCOHOL 970904A-803 000204 NO NO

FAILURE MODE-LEAK. TWO UNITS REJECTED FOR EXTERNAL LEAKAGE, ALL CONFIRMED, AND CAUSED BY FLEXING BEYOND THE ENDURANCE LIMIT OF THE BELLOWS MATERIAL.

CORRECTIVE ACTION-ECP 1530 AUTHORIZED REDesign RELEASED 3/3/82 AS P/N 27-02420-5.

PROPULSION INTERFACE-AB
LOX FEED
A-9H-06-104
HOSE FLEX, SUSTAINER LOX
FAR
27-02404-803
SAFB
611280
YES FLEXIBLE METAL
NO HOSE

FIGURE 10. MODEL OF A TENSILE-TEST MATERIAL-UNIT REMOVED FROM A PAIR OF LEAVES, LEAVAGE LANE, 10 IN. UPSTREAM OF THE PLATE SECTION CONVOLUTIONS. FRACTURE IS RESULT OF FLEXING THE BELLOWS BEYOND THE MATERIAL ENDURANCE LIMIT.

LAW HOME IS AVAILABLE, NEW - 805 MODELS ARE TO BE INSTALLED INSTEAD OF PLATE, TO REPLACE SUBJECT HOME. UNIT
CORRECTIVE ACTION-ECR 150 COMES INSTEAD OF HOME. RELEASED 1-12-88, P/N 87-02422-3.

PK 9048

GENERAL DYNAMICS
CONVAIR DIVISION

18 JUN

DIFFICULTIES REVIEWED DURING DESIGN OF THE AIRBORNE INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	AD61-0348/DAS0/DL8-4HD-01-114 VALVE-FILL AND DRAIN	COMPOSITE-FR00PL	1140	1-8/PALC NO 61-218	NO	
FAILURE MODE-PREMATURITY OPERATION. PREMATURE CLOSING OF LOX AIRBORN; FILL AND DRAIN VALVE DUE TO PREMATURE PICK UP OF 99.3 PERCENT EDO SIGNAL AND FAILURE TO DEPRESS LOX LOAD BUTTON WHIN LOX START WAS DEPRESSURED.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. LOX LOADING STOPPED PREMATURELY.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B LOX FEED	A-9B-116-007	DUCT ASSEMBLY, LOX PRESSURE	FAR ET-23510-500	30E 6111A	ETR 6111A	YES CONVAIR NO

FAILURE MODE-OUT OF TOLERANCE. ASSEMBLY REMOVED BY SITE PERSONNEL FOR A METALLIC RATTLING SOUND WHEN STRUCK WITH THE HAND. RATTLE WAS DETERMINED TO BE CAUSED BY A MAXIMUM TOLERANCE BUILD-UP IN THE TORUS PIN ASSEMBLY IN THE OMEGA JOINT NEAREST THE PUMP INLET. ASSEMBLY DECLARED USABLE BY THE DESIGN GROUP.

COERCITIVE ACTION-NONE

PROPELLION INTERFACE-A/B
LOX FEED
A-19-018-002
VALVE MOTOR, LOX FILL AND DRAIN AI 27-0202-23
FAR
AIRBORNE

FAILURE MODE-SHORT (SELECT.)-DURING PU SYSTEM TESTS PINS E AND C, OPEN AND CLOSE RESPECTIVELY, WERE FOUND TO BE SHORTED TO THE GROUND. THE SHORT WAS TRACED TO THE MOTOR. THE WIRE FROM THE THERMAL OVERLOAD PROTECTOR TO THE BRUSH HOLDER WAS BROKEN AT THE HOLDER SOLDER JOINT AND SHORTED ON THE MOTOR HOUSING.

CORRECTIVE ACTION-VENDOR ADVISED THE ACTUATORS WILL BE PRETESTED PRIOR TO ASSEMBLY TO PRECLUDE SUCH CASES IN THE FUTURE.

PROPELLION INTERFACE-AB 9D-08-093 FAR 24E 611118 WTR YES N.M. LANGAN C 688365
LOX FEED VALVE, CHECK LOX TAPPING 87-08501-3 NO O.

FAILURE MODE-LEAK-UNIT REPORTED FOR INTERNAL LEAKAGE. LEAKAGE COULD NOT BE CONFIRMED DURING FAILURE ANALYSIS. THIS ALIVE HAD NOT BEEN QUALIFIED.

LEONARD CO. SUPPLIER BY W.D. A-7691 CONNECTIVE ACTION-THIS VALUE TO BE REPLACED WITH

**GENERAL DYNAMICS
CONVAIR DIVISION**

SIELECKI, KARINA - EPIKINETIK UND INTELLIGENZ

SIEFEINER, REKIEK - EINER HILFSSCHULE IN MÜNCHEN

PROPELLION INTERFACE-A/A SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENOR NAME VENOR PART NO
PROPULSION INTERFACE-A/A LOW FEED	46-08-08-091 VALVE, LOX FILL AND DRAIN,	FAN	680	ETR	YES	AIRRESEARCH NO

FAILURE MODE-LEAK-EXTERNAL-UNIT REMOVED FOR EXTERNAL LEAKAGE FROM THE BUTTERFLY ACTUATOR SHAFT SEAL. LEAKAGE DUE TO ROUGH SURFACE FINISH ON THE SHAFT SEAL AREA. FINISH MEASURED AS TO 10A RMS. 10 RMS IS BEAUTIFUL.

COOPERATIVE ACTIVITIES WHICH MOTIVATED AND FACILITATED ALL SIGHT CHARACTERS UNDERTAKEN.

FAILURE MODE-LEAK-EXTERNAL-UNIT REPLACED DURING VALVE CHECKOUT FOR EXCESSIVE EXTERNAL LEAKAGE FROM THE BUTTERFLY SHUT-OFF VALVE. FAILURE ANALYSIS REVEALED EXTERNAL LEAKAGE WITH THE BUTTERFLY CLOSED WHEN PRESSURIZED FROM THE GROUND SIDE. NO LEAKAGE WAS EVIDENT WHEN PRESSURIZED FROM THE AIRBORNE DIRECTION. THE ONLY TIME SUCH LEAKAGE WOULD OCCUR IS DURING A LEAK CHECK AS ABOVE PER PROCEDURE 87-934AP-BREF.

COMPREHENSIVE ACTION-PROCESSES DEVISED TO ELIMINATE TWO ABOVE PROBLEMS

PROPELLION INTERFACE-A/B
LOX FEED LINE ASSEMBLY, LOX TIPPING FLEXIBL 27-23561-1
FAR 41E
FAFB 611025
YES CONVAIR
NO

FAILURE MODE-LEAK-EXTERNAL-HOSE WAS REMOVED FOR EXTERNAL LEAKAGE FROM THE FLEX SECTION. ONE CONVOLUTION CONTAINED A 3/4 INCH CRACK. METAL FATIGUE WAS CAUSE OF FAILURE. IT WAS DETERMINED THE ABOVE RESULTED FROM IMPROPER INSTALLATION
CALIFORNIA INDUSTRIAL STAFF

CORRECTIVE ACTION-PLANNING WAS REVISED TO REQUIRE MORE POSITIVE INSTALLATION AND INSPECTION METHODS. OTHER VEHICLES

PROPELLION INTERFACE-A/B SH-08-003 HOSE FLEXING, VIE LOX SUPPLY FAIR 27-02404-003

FAILURE MODE-LEAK-EXTERNAL-UNIT REPLACED FOR EXTERNAL LEAKAGE AT THE FLEX SECTION. FAILURE IS DUE TO METAL FATIGUE

CORRECTIVE ACTION-ECP 1530 AND CIC 88017 INITIATED TO REDESIGN AND REPLACE THIS NOSE WITH 27-08425-1. DURING INTERVIEWS BULLETIN 88017 DIRECTS INSTALLATION OF NEW CURRENT NOSES PRIOR TO FLIGHT.

15 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	AC-01-0090/01-004-A4-01 TURBOPUMP INLET	CAPTIVE	1F 010922	01/0TC NO	YES	000009

FAILURE MODE-OUT OF EXPECTED TEST VALUE. BOOSTER AND SUSTAINER LOX PUMP INLET TEMPERATURES EXHIBITED ABNORMALLY HIGH TEMPERATURES DURING ENGINE START. BI WAS -260.0, BE WAS -219.1, AND SUST. WAS -275 DEGREES F AT IGNITION.

SYSTEM EFFECT-NONE.

VEHICLE EFFECT-NONE.

CORRECTIVE ACTION-UNKNOWN.

PROPELLION INTERFACE-A/B LOX FEED	9H-06-002 VALVE, CHECK, LOX Topping SYSTEM	FAR 27-02301-5	50E 010625	EAFB NO O.	YES	W.H. LAMAGAN C 000279
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FAILURE MODE-LEAK-VALVE REPLACED DURING MISSILE CHECKOUT FOR INTERNAL LEAKAGE IN THE CHECK DIRECTION. THIS VALVE HAD NOT BEEN QUALIFIED. EXAMINATION REVEALED THE TEFLON SEAL HAD COLD FLOWED PREVENTING FULL CONTACT WITH POPPET.

CORRECTIVE ACTION-REPLACEMENT WITH A-001 VALVE SUPPLIED BY W.D. LEONARD.

PROPELLION INTERFACE-A/B LOX FEED	88-06-034 HOSE, VERNIER ENGINE FLEXIBLE	FAR 27-02404-801-803	610004 010603	YES FLEXIBLE METAL NO HOSE	YES FLEXIBLE METAL NO HOSE	000001
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FAILURE MODE-STRUCTURAL-FIFTEEN FLEX HOSES FROM E SERIES VEHICLES, AT SYCAMORE AMR, EAFB, WTR, FAFB AND S.D. ALL HOSES LEAKED EXTERNALLY FROM ONE OF THE THREE FLEX SECTIONS IN THE HOSE. CAUSE CONCLUDED TO BE RESULT OF FATIGUE AS A RESULT OF FLEXING THE MONEL BELLOWS.

CORRECTIVE ACTION-ECP 1256 PREPARED TO REDESIGN THE HOSE. UNTIL NEW HOSES ARE AVAILABLE AIR BULLETIN NO. 69 DIRECTS INSTALLATION OF NEW HOSES PRIOR TO FLIGHT.

PROPELLION INTERFACE-A/B LOX FEED	9H-06-075 HOSE, FLEX, V/E LOX SUPPLY	FAR 27-02404-803	53E 010603	EAFB NO HOSE	YES FLEXIBLE METAL NO HOSE	000109
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FAILURE MODE-LEAKAGE. EXTERNAL LEAKAGE IN THE FLEXIBLE PART OF THE HOSE. AS IN PREVIOUS CASES THIS FAILURE OF FLEXING IS BEYOND THE ENDURANCE LIMIT OF THE MONEL MATERIAL. THIS INSTANCE OCCURRED UNDER STAND-BY CONDITIONS.

CORRECTIVE ACTION-ECP 1258 PREPARED TO REDESIGN HOSE. AIR BULLETIN NO. 69 DIRECTS INSTALLATION OF NEW HOSES PRIOR TO FLIGHT UNTIL NEW HOSES ARE AVAILABLE.

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GENERAL DYNAMICS
COMMUNICATIONS

DIRECTORIAL REVIEWS AND INFLUENCE 111

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENOR NAME VENOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	9D-08-073 VALVE, CHECK, LOX TAPPING	FAR 27-02501-3D	27E 010613	WTR 01	YES W.H. LANAGAN C NO O.	099100
PROPELLION INTERFACE-A/B LOX FEED	CT-0B-08-003 SUSTAINER START FLEX HOSE SLEEVE	FAR 27-02166-3	010609	ETR NO SE	YES FLEX. METAL NO	099039
PROPELLION INTERFACE-A/B LOX FEED	AB-61-0008/14-003-03 VERNIER FUEL SUPPLY-DUCTING	FAR 27-02501-5D	1-4F 010602	1-4/ETMA YES RDS NO		
PROPELLION INTERFACE-A/B LOX FEED	9H-08-070 VALVE, CHECK, LOX TAPPING	FAR 27-02501-5D	010520	FAR 01	YES W.H. LANAGAN C NO O.	099107
PROPELLION INTERFACE-A/B LOX FEED	AB-61-0008/14-003-03 VERNIER FUEL SUPPLY-DUCTING	FAR 27-02501-5D	1-4F 010602	1-4/ETMA YES RDS NO		
PROPELLION INTERFACE-A/B LOX FEED	9D-08-068 HOSE, FLEXIBLE, V/E LOX SUPPLY	FAR 27-02404-003	010903	WTR NO HOSE	YES FLEXIBLE METAL NO HOSE	099040
PROPELLION INTERFACE-A/B LOX FEED	9D-08-068 HOSE, FLEXIBLE, V/E LOX SUPPLY	FAR 27-02404-003	010903	WTR NO HOSE	YES FLEXIBLE METAL NO HOSE	099040

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GENERAL DYNAMICS
CONVAIR DIVISION

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DA-A SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B LOX FEED	9B-06-062 DISCONNECT, START TANK VENT LINE	FAR 27-08424-1	\$10323	ETR	YES CONVAIR NO	699222
OF FLEXING BELLOWS BEYOND ENDURANCE LIMIT OF MATERIAL.						
CORRECTIVE ACTION-ECP 1256 PREPARED FOR REDESIGN. AMR BULLETIN NO. 69 DIRECTS INSTALLATION OF NEW HOSES PRIOR TO FLIGHT UNTIL REDESIGNED HOSES ARE AVAILABLE.						
PROPELLION INTERFACE-A/B LOX FEED	AD61-0076/DA391/01-5M0-02-07	COMPOSITE-FRD/DPL \$10310	TE	YES NO		699222
FAILURE MODE-LEAK AT SLIP JOINT AT THE FIRE SHIELD. FAILURE NOT CONFIRMED DUE TO LACK OF COMPLETE SLIP JOINT FOR ANALYSIS. THE PART RECEIVED WAS IN TOLERANCE. THIS JOINT IS NOT INTENDED TO BE LEAKPROOF. FAILURE CONSIDERED IMPROBABLE AND COULD NOT BE CONFIRMED.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B LOX FEED	9A-06-058 VALVE, LOX TOPPING CHECK	FAR 27-08301-3	EAFB	YES W.H.LAMA GANCO. NO		699222
FAILURE MODE-STRUCTURAL- THIS REPORT COVERS SIX VALVES. TWO OF THE VALVE'S HAVING KEL-F POPPETS WHICH SHATTERED. THE REMAINING FOUR VALVES CONTAINED ALUMINUM POPPETS IN WHICH THE POPPET GUIDE STEMS WERE CALLED						
CORRECTIVE ACTION-A-5 VALVE WAS DEVELOPED CONTAINING HARD ANODIZED ALUMINUM POPPETS AND A SOFTER POPPET SPRINGS TO REDUCE POPPET CHATTER. EFFECTIVITY WAS ON E SERIES BY 1-1-81						

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW- PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DEF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	SA-08-058 LOX TAPPING CHECK VALVE POPPET	FAR 27-09501-3	601130 EAFB	NO	YES M.M.LANGAN CO	699676
FAILURE MODE-STRUCTURAL- THIS REPORT COVERS SIX VALVES. TWO OF THE VALVES HAVING KEL-F POPPETS WHICH SHATTERED. THE REMAINING FOUR VALVES CONTAINED ALUMINUM POPPETS IN WHICH THE POPPET GUIDE STEMS WERE GALLED.						
CORRECTIVE ACTION-A-9 VALVE WAS DEVELOPED CONTAINING HARD ANODIZED ALUMINUM POPPETS AND A SOFTER POPPET SPRINGS TO REDUCE POPPET CHATTER. EFFECTIVITY WAS ON E SERIES BY 1-1-61.						
PROPELLION INTERFACE-A/B LOX FEED	AEGD-0341/P1-402-01-71	FLIGHT	71D 601013	11/MTR 115.4	YES NO	697666
FAILURE MODE-CONTAMINATION. ERRATIC SUSTAINER LOX PUMP INLET PRESSURE DATA AND B1 PERFORMANCE DATA DECREASES INDICATE AN OBSTRUCTION WAS IN THE LOX LOW PRESSURE DUCT.						
SYSTEM EFFECT-OPERATION TOO LOW.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B LOX FEED	ETR-013/14-507-1H-SE B2 GAS GENERATOR INJECTOR LOX POPP ET	CAPTIVE RIES 600308	1-4 E SE 1-4/EDMA YES RDS T+0.16			699393
FAILURE MODE-OUT OF EXPECTED VALUE. LOX POPPET UPSTREAM PRESSURE INDICATED A PREMATURE PRESSURE RISE AT T+0.16 SEC. THIS IS INDICATIVE OF HOT GAS LEAKAGE PAST THE POPPET.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-INJECTOR AND POPPET WERE EXAMINED AND FOUND TO BE IN SATISFACTORY CONDITION.						
PROPELLION INTERFACE-A/B LOX FEED	ETR-013/14-507-1H-SE B2 PUMP INLET OMEGA JOINT	CAPTIVE	600308 1-4/EDMA YES RDS NO			699696
FAILURE MODE-STRUCTURAL OMEGA JOINT WAS SPREAD EXCESSIVELY DUE TO A HIGH PRESSURE SURGE IN THE SYSTEM AT ENGINE START.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNK/NOM.						
						PAGE 0011

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/RETRY NUMBER FAILED COMPONENT NAME	DFI DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	9B-06-051 START TANK FLEXIBLE HOSE	FAR 27-02245-1	51D 600411	ETR	YES NO	FLEXIBLE METAL HOSE CO. 068587
FAILURE MODE-EXTERNAL LEAK - HOSE REPORTED LEAKING WHILE INSTALLED. FAILURE ANALYSIS DETERMINED LEAKAGE IN THE CONVOLUTED SECTION, DURING REMOVAL OF WIRE BRAID TO UNCOVER THE CONVOLUTES; THE CONVOLUTES WERE INADVERTENTLY CUT, MASKING THE FAILURE. AS A RESULT NO CONCLUSIONS WERE REACHED.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B LOX FEED	9B-06-051 HOSE, LOX START TANK FLEXIBLE	FAR 27-02245-1	51D 600411	ETR	YES NO	FLEXIBLE METAL HOSE CO. 068584
FAILURE MODE-LEAK-EXTERNAL - THE HOSE WAS REPORTED AS LEAKING WHILE INSTALLED. DURING FAILURE ANALYSIS THE LEAKAGE WAS DUPLICATED AND WAS DETERMINED TO BE IN THE CONVOLUTION SECTION, WHILE REMOVING THE WIRE BRAID, TO UNCOVER THE CONVOLUTES, THE CONVOLUTES WERE INADVERTENTLY CUT, MASKING THE REPORTED FAILURE. AS A RESULT NO CONCLUSIONS WERE REACHED.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B LOX FEED	ETR-000/14-503-E1-SE B2 LOX PUMP INLET DUCT OMEGA JOINT 27-215.8-105	CAPTIVE	14E 600403	1-4/EDMA YES RDS NO		068514
FAILURE MODE-FAIL DURING OPERATION. OMEGA JOINT INDICATED EXCESSIVE SPREADING, APPARENTLY DUE TO HIGH PRESSURE SURGES AT ENGINE START.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-DUCTING WAS REPLACED AND THE LOX BUG INJECTION WAS MODIFIED TO PREVENT THE PRESSURE SURGE.						
PROPELLION INTERFACE-A/B LOX FEED	9B-06-048 STAGING VALVE SEAL, LOX START TANK 27-020424-1 VENT	FAR 600419	44D 600419	ETR	YES CONVAIR NO	068502
FAILURE MODE-EXTERNAL LEAK - UNIT WAS LEAKING WHILE INSTALLED. PART OF THE TEFLON LIP SEAL WAS FOUND BROKEN. SEAL ALO SO CONTAINED A HEAVY LAYER OF LUBRICANT, CONTRARY TO T.O. INSTRUCTIONS. SEAL DAMAGE WAS CAUSED DURING A DEMATING OPERATION BY THE MALE PROBE CATCHING AND SHEARING THE SEAL.						
CORRECTIVE ACTION-EFFECTIVE APPROX. 15 APRIL 1960, A DECAL WAS PLACED ON EACH UNIT INSTRUCTING THAT NO LUBRICANT BE USED AND THAT THE SEAL BE REPLACED PRIOR TO REHATE.						
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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	98-06-048 DISCONNECT SEAL, STAGING, START TA 27-20424-1 NO DRAIN	FAR 27-02102-023	4-63 00010	ETR	YES CONVAIR NO	099305
FAILURE MODE-LEAK - EXTERNAL - THE UNIT WAS LEAKING EXTERNALLY WHILE INSTALLED. A PART OF THE TEFLON LIP SEAL WAS FOUND BROKEN AWAY. THE SEAL ALSO CONTAINED A HEAVY LAYER OF LUBRICANT, CONTRARY TO T.D. INSTRUCTIONS. SEAL DAMAGE WAS CAUSED DURING A DENATING OPERATION BY THE MALE PROBE CATCHING AND SHEARING THE SEAL.						
CORRECTIVE ACTION-EFFECTIVE APPROXIMATELY APRIL 15, 1980 A DECAL WAS PLACED ON EACH UNIT INSTRUCTING THAT NO LUBRICANT BE USED AND THAT THE SEAL BE REPLACED PRIOR TO REPAIR.						
PROPELLION INTERFACE-A/B LOX FEED	98-06-045 A/B LOX F AND D VALVE GEARS	FAR 27-02102-023,-025	15D+15D 00010	SYC. NO	YES AIRESEARCH	099301
FAILURE MODE-CONTAMINATION. BOTH VALVES S/N 126P-112, VEHICLE 15D, AMR, AND 69P-138, VEHICLE 24D, CAFB, FAILED TO OPEN WITH POWER. BOTH ACTUATOR GEAR TRAINS WERE SEIZED BY RUST AND CORROSION AS RESULT OF WATER ENTRANCE.						
CORRECTIVE ACTION-THE -629 VALVE WAS PHASED INTO USE, WHICH CONTAINS THE SEALED ACTUATOR AND CONTAINS A DESSICANT.						
PROPELLION INTERFACE-A/B LOX FEED	98-06-045 A/B FILL AND DRAIN VALVE ACTUATOR	FAR 27-02102-023	15D 000107	E'R 000107	YES AIRESEARCH NO	099300
FAILURE MODE-FAIL TO OPERATE. VALVE FAILED TO OPEN WITH POWER. ACTUATOR GEAR TRAIN WAS SEIZED WITH RUST AND CORROSION AS RESULT OF WATER ENTRANCE.						
CORRECTIVE ACTION-629 VALVE WAS PHASED INTO USE, CONTAINING A SEALED ACTUATOR WITH DESSICANT.						
PROPELLION INTERFACE-A/B LOX FEED	98-06-045 A/B FILL AND DRAIN VALVE ACTUATOR	FAR 27-02102-023	24D 000107	SYC 000107	YES AIRESEARCH NO	099301
FAIL TO OPERATE. VALVE FAILED TO OPEN WITH POWER. ACTUATOR GEAR TRAIN WAS SEIZED WITH RUST AND CORROSION AS RESULT OF WATER ENTRANCE.						
CORRECTIVE ACTION-629 VALVE WAS PHASED INTO USE, CONTAINING A SEALED ACTUATOR WITH DESSICANT.						

15 JUN 1968

GEERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	9A-06-044 PRV - LVE, LOX	FAR 27-02821-3	24D 581219	EDWARDS 301219	YES B.M.HADLEY NO	000007
FAILURE MODE-FAIL TO OPERATE. VALVE COULD NOT BE OPENED WITH 600 POUNDS TORQUE.						
CORRECTIVE ACTION-THIS VALVE WAS MODIFIED FROM AN EARLY B AND C SERIES VALVE WHICH REQUIRED 3600 INCH POUNDS TORQUE. • VALVE WAS INSTALLED INADVERTENTLY AT SYCAMORE PRIOR TO SHIPMENT. NO CORRECTIVE ACTION WAS TAKEN.						
PROPELLION INTERFACE-A/B LOX FEED	9A-06-044 PREVALVE	FAR 27-02821-3	24D 581219	EDWARDS NO	YES B.M.HADLEY NO	000008
FAILURE MODE-OUT OF TOLERANCE - VALVE COULD NOT BE OPENED WITH 800 INCH POUNDS TORQUE.						
CORRECTIVE ACTION-THIS VALVE WAS MODIFIED FROM AN EARLY B AND C SERIES VALVE WHICH REQUIRED 3600 INCH POUNDS TORQUE. • VALVE WAS INSTALLED INADVERTENTLY AT SYCAMORE PRIOR TO SHIPMENT. NO CORRECTIVE ACTION TAKEN.						
PROPELLION INTERFACE-A/B LOX FEED	FTAB450/P3-4B#-01-40 LOX START/TANK VENTLINE, STAGING/DISCON NECT	COMPOSITE-FRD/DPL 40D 581214	13/ETR 581214	YES NO	YES AIRESEARCH NO	000009
FAILURE MODE-LEAK-EXTERNAL - LOX LEAK FOUND AT THE LOX START TANK VENT LINE PLUGGING DISCONNECT.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-LOX START TANK VENT LINE PLUGGING DISCONNECT REPLACED.						
PROPELLION INTERFACE-A/B LOX FEED	9D-06-059 A/D FILL AND DRAIN VALVE SWITCH, # 2 -02102-025 PRING	FAR 581024	9D 581024	WTR NO	YES AIRESEARCH NO	000072
FAILURE MODE-FAIL DURING OPERATION-VALVE ACTUATED IN SHORT JERK MOTIONS. TESTS INDICATED ACTUATION WAS NORMAL, BUT INDICATION WAS SPASMODIC. THIS WAS CAUSED BY THE CANTILEVER SPRING, BETWEEN THE OPEN CATCH AND CAM, EXERTING A FORCE ON THE INTERNAL SWITCH RETURN SPRINGS, PREVENTING THE SWITCH FROM RETURNING TO ITS NORMAL POSITION.						
CORRECTIVE ACTION-VENDOR REDESIGNED THE SWITCH SPRING ARRANGEMENT TO PREVENT ABOVE PROBLEM. CHANGE IS ON -057 AND -029 VALVES.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENOR NAME VENOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	9D-06-039 A/B LOX FAN/NOVVALE, SWITCH	FAR 27-02102-025	81D 591023	MTR	YES AIRESEARCH NO	699700

FAILURE MODE-FAIL TO OPERATE. NO CLOSED INDICATION ALTHOUGH VALVE OPERATION WAS NORMAL. THE CLOSED SWITCH ACTUATING CAM SCREW WAS IMPROPERLY ADJUSTED. READJUSTMENT CURED THE PROBLEM.

CORRECTIVE ACTION-VENDOR IMPROVED HIS QC PROCEDURES TO PREVENT IMPROPER ADJUSTMENT.

PROPELLION INTERFACE-A/B LOX FEED	9D-06-039 A/B FILL AND DRAIN VALVE SWITCH	FAR 27-02102-025	21D 591023	MTR	YES AIRESEARCH NO	699494

FAILURE MODE-FAIL DURING OPERATION.-NO CLOSED INDICATION ALTHOUGH VALVE OPERATION WAS NORMAL. THE CLOSED SWITCH ACTUATING CAM SCREW WAS IMPROPERLY ADJUSTED. READJUSTMENT CURED THE PROBLEM.

CORRECTIVE ACTION-VENDOR IMPROVED HIS Q.C. PROCEDURES TO PREVENT IMPROPER ADJUSTMENT.

PROPELLION INTERFACE-A/B LOX FEED	EM1332/P4-002-00-1U AIRBORNE FILL AND DRAIN VALVE	PRF	10D 590903	14/ETR -120	YES NO	699387

FAILURE MODE-FAIL TO CEASE TO OPERATE. THE AIRBORNE LOX FILL AND DRAIN VALVE FAILED TO CLOSE DURING COUNTDOWN POSSIBLY DUE TO TEMPORARY MALFUNCTION OF THE VALVE OR ASSOCIATED CIRCUITRY. THE COUNTDOWN WAS RECYCLED AND THE VALVE CLOSED SATISFACTORILY ON REPEATED TRIALS AND IT WAS DECIDED TO RESUME THE COUNTDOWN.

CORRECTIVE ACTION-OPERATION DOES NOT START. AIRBORNE LOX FILL AND DRAIN VALVE REMAINED OPEN, PREVENTING START OF FINAL PHASES OF SECURE FROM TANKING OPERATION.

VEHICLE EFFECT-COUNTDOWN DELAYED. COUNTDOWN WAS DELAYED 9 MINUTES.

CORRECTIVE ACTION-NONE INDICATED. POSSIBLE CAUSE OF FAILURE COULD HAVE BEEN TEMPORARY MALFUNCTION OF VALVE. OTHER POSSIBILITY COULD BE TEMPORARY MALFUNCTION OF LOGIC CIRCUITRY.

PROPELLION INTERFACE-A/B LOX FEED	PTA699/P4-402-00-10 VALVE-FILL AND DRAIN-LOX	PRF	100 590903	14/ETR -420	YES NO	699295

FAILURE MODE-FAIL TO CEASE TO OPERATE. THE AIRBORNE LOX FILL AND DRAIN VALVE DID NOT CLOSE UPON COMMAND.
SYSTEM EFFECT-NONE.

VEHICLE EFFECT-COUNTDOWN DELAYED. NINE MINUTE HOLD AND 8 MINUTE RECYCLE.

CORRECTIVE ACTION-CYCLED VALVE AND IT CLOSED IMMEDIATELY. REPEATED CYCLING INDICATED NORMAL OPERATION AND TEST WAS RESUMED.

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DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
						681148
VEHICLE EFFECT-COUNTDOWN ABORTED AND RE_SCHEDULED; CUTOFF WAS INITIATED BY TIME-TEST-CONDUCTOR. TEST WAS RECYCLED TO MINUS 70 MINUTES AND HELD FOR 90 MINUTES BEFORE TEST TERMINATION.	CORRECTIVE ACTION-UNKNOWN.					
PROPELLION INTERFACE-A/B LOX FEED	86-06-033 A/B LOX FILL AND DRAIN VALVE SEAL	FAR 27-08102		590623	BYCAMORE YES AIRESEARCH NO	686666
FAILURE MODE-INTERNAL LEAK. LEAKAGE FOUND AT 2 PSIG DURING LEAK CHECK. KEL-F LIP SEAL WAS DAMAGED. DAMAGE TO SEAL OCCURRED WHEN A/B AND GROUND HALVES ENGAGED WHILE THE A/B FLAPPER WAS OPEN. PROCEDURES CALLS FOR VALVE TO BE CLOSED WHEN MATING HALVES.	CORRECTIVE ACTION-SITE PERSONNEL NOTIFIED OF CAUSE OF FAILURE AND CAUTIONED TO FOLLOW PROCEDURES.					
PROPELLION INTERFACE-A/B LOX FEED	B8-06-029 FUEL DUCT, SUSTAINER LOW PRESSURE	FAR 7-22232-3	SD	590613	BYCAMORE YES CORVAIR NO	689708
FAILURE MODE-STRUCTURAL-DUCT CRACKED IN A FLEXIBLE BELLOWS SECTION CONTAINING 16 CONVOLUTIONS. MATERIAL IN FAILED AREA WAS APPROXIMATELY ONE HALF NORMAL THICKNESS.	CORRECTIVE ACTION-MODE-IN VIEW OF SATISFACTORY EXPERIENCE ON B AND C MISSILES AND INCORPORATION OF AN IMPROVED BELL ODS ON D SERIES.					
PROPELLION INTERFACE-A/B LOX FEED	SI-903-03-02 LOX FILL AND DRAIN VALVE	CAPTIVE	EC	581223	SYC YES NO	683861
FAILURE MODE-CUT OF TOLERANCE. AFTER DUMPING LOX THE LOX FILL AND DRAIN VALVE FAILED TO FULLY CLOSE IN TIME FOR ENGINE START. PROBABLE CAUSES ARE LOX TANK AT SEQUENCE 3 PRESSURE AND VALVE TEMPERATURE LOWER THAN NORMAL DUE TO TOPPING OFF FLOW.	CORRECTIVE ACTION-MODE-TEST TERMINATED PRIOR TO ENGINE START.					
VEHICLE EFFECT-COUNTDOWN ABORTED AND RE_SCHEDULED.	CORRECTIVE ACTION-UNKNOWN.					
PROPELLION INTERFACE-A/B LOX FEED	EN-1026/TEST 14-308-84 LOX PRE-VALVE	CAPTIVE	RD3 253 SEC	580806	I-4/EDNA YES NO 253 SEC	
FAILURE MODE-PREMATURE OPERATION. TEST TERMINATED PREMATURELY AFTER 0.39 SECONDS OF SOLO VERNIER OPERATION WHEN LOX PRE-VALVE AUTOMATICALLY LEFT OPEN POSITION AS A NORMAL RESULT OF SHUTDOWN. THE LOX PRE VALVE INTERLOCK CIRCUITRY HA						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME DIF OTH	BITE VENDOR NAME VENDOR PART NO
D NOT BEEN MODIFIED TO PREVENT DROPOUT OF THE LOX PRE-VALVE MICROSWITCH FROM INITIATING VERNIER CUTOFF. SYSTEM EFFECT-OPERATION STOPS EARLY. MODIFICATION TO LOX PRE-VALVE INTERLOCK CIRCUITRY HAD NOT BEEN ACCOMPLISHED FOR THIS TEST.				693036
VEHICLE EFFECT-NONE.				
CORRECTIVE ACTION-UNKNOWN.				
PROPULSION INTERFACE-A/B LOX FEED	FT42710/P4-102-00-15 DUCTING AND TUBING-RIGID	FRP 580318	15A 14/ETR NO	693616
FAILURE MODE-STRUCTURAL. A GOUGE WAS DISCOVERED IN THE V2 LOX LINE.				
SYSTEM EFFECT-NONE.				
VEHICLE EFFECT-COUNTDOWN ABORTED AND RE-SCHEDULED. THIS PROBLEM TOGETHER WITH ANOTHER PROBLEM CAUSED TEST CANCELLATION.				
CORRECTIVE ACTION-LINE WAS REPLACED.				
PROPULSION INTERFACE-A/B LOX FEED	TS-11-1113P-6 VOLVOFLORMETER, FITTING	CAPTIVE 571028	5A 1-1/EDMA YES RDS NO	693651
FAILURE MODE-LEAK-EXTERNAL. DURING THE TEST THE PRESENCE OF VAPORS WAS EVIDENT IN THE VICINITY OF THE V2 PROPELLANT VALVE. POST TEST INVESTIGATION REVEALED THE LOX FLORMETER FITTING WAS LEAKING.				
SYSTEM EFFECT-LOW TEMPERATURE ENVIRONMENT.				
VEHICLE EFFECT-NONE.				
CORRECTIVE ACTION-UNKNOWN.				
PROPULSION INTERFACE-A/B LOX FEED	EM-7571-A-115-SP4 LOX PRE-VALVE CONTROL VALVE	CAPTIVE 571026	2A 1-EDMA YES D1 NO	693651
FAILURE MODE-FAIL DURING OPERATION. THE LOX PRE-VALVE CONTROL VALVE WAS NOT PROPERLY ACTUATING THE LOX PRE-VALVE.				
SYSTEM EFFECT-NONE.				
VEHICLE EFFECT-COUNTDOWN ABORTED AND RE-SCHEDULED.				
CORRECTIVE ACTION-THE LOX PRE-VALVE CONTROL VALVE (SOLENOID) HV-500 WAS REPLACED. A DECISION WAS INSTITUTED TO MODIFY THE LOX PRE-VALVE CONTROL VALVE CONFIGURATION BY INSTALLING TWO HV-74 SOLENOIDS IN PLACE OF THE EXISTING HV-500 & OLENOIDS.				

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	PRI DIF OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B LOX FEED	EM6341-1-104-SP-1 BOOSTER LOX START TANK REGULATOR	CAPTIVE	SA 370920	1-1/EDMA YES RDS NO	690276
FAILURE MODE-OUT OF TOLERANCE. THE BOOSTER LOX START TANK REGULATOR COULD NOT BE SET TO THE PROPER LEVEL.					
SYSTEM EFFECT-NONE. THE SYSTEM WAS NOT YET IN OPERATION.					
VEHICLE EFFECT-COUNTDOWN WAS DELAYED THE REGULATOR HAD TO BE REPLACED.					
CORRECTIVE ACTION-REGULATOR WAS REPLACED.					
PROPELLION INTERFACE-A/B LOX FEED	EM6341-1-104-SP-1 VERNIER START TANK HIGH PRESSURE L INE B-MUT	CAPTIVE	SA 370920	1-1/EDMA YES RDS NO	690276
FAILURE MODE-LEAK-EXTERNAL. LOOSE VERNIER LOX START TANK HIGH PRESSURE LINE B-MUT.					
SYSTEM EFFECT-NONE.					
VEHICLE EFFECT-COUNTDOWN WAS DELAYED IN ORDER TO TAKE REMEDIAL ACTION.					
CORRECTIVE ACTION- THE B-MUT WAS TIGHTEN.					
PROPELLION INTERFACE-A/B FUEL FEED	974-3-06-27	FLIGHT	164D 660407	368 YES YES	YES GO/C 690410
FAILURE MODE-PREMATURE OPERATION. THE PU SYSTEM WAS UNABLE TO CORRECT FOR A LOX RICH ERROR ALTHOUGH ITS OPERATION WAS PROPER. SECO OCCURRED 6 SECONDS EARLY AS THE RESULT OF FUEL DEPLETION. FUEL LEAKAGE IS A POSSIBLE CAUSE.					
SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY. PREMATURE FUEL DEPLETION.					
VEHICLE EFFECT-PREMATURE SUSTAINER ENGINE CUTOFF ALTHOUGH MISSION REQUIREMENTS WERE MET.					
CORRECTIVE ACTION-OPEN-INVESTIGATION IS BEING PERFORMED TO DETERMINE IF PRIMARY CAUSE IS LEAKAGE OR FUEL RICH BURNING OF THE BOOSTER ENGINE.					
PROPELLION INTERFACE-A/B FUEL FEED	SLV-A9-06-5017-P PREVALVE	FAR	631129 7-022607-1	FACTORY YES MADLEY NO 10377-1	
FAILURE MODE-INTERNAL LEAK. VALVE REPORTEDLY LEAKED 2200 CUBIC CENTIMETERS PER MINUTE PAST THE BUTTERFLY. THE LEAK WAS MARGINAL AND ATTRIBUTED TO IMPROPER ANGLE OF THE SEAL SPRING SEALING FORCE. VISUAL INSPECTION REVEALED THE SPRING WAS BENT BEYOND REQUIRED TOLERANCE.					
CORRECTIVE ACTION-GO/C QUALITY CONTROL CORRECTIVE ACTION WAS INITIATED REQUESTING A SURVEY OF ALL MODIFIED FUEL VALVES TO ASSURE CORRECT REWORK, TESTING, AND DOCUMENTATION. CORRECTIVE ACTION IS DOCUMENTED IN MAR SLV-A9-06-5746.					
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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
690100						
PROPELLION INTERFACE-A/B FUEL FEED	BLV-99-06-3010-P SUSTAINER FUEL PRE-VALVE.	FAR 27-02250-3	691112	FACTORY	YES	FAIRCHILD-STRATON NO. TOS 02-350-1
FAILURE MODE-LEAK. UNIT LEAKED 150 STANDARD CUBIC INCHES PER MINUTE DUE TO THE POSSIBILITY OF A LARGE CONTAMINANT CAUGHT BETWEEN THE BUTTERFLY SEAL AND VALVE BODY. VISUAL INSPECTION REVEALED TWO SMALL CUTS AND CONSIDERABLE MOLYBIDIUM-M-DISULFIDE LUBRICANT ON THE OUTSIDE OF THE SEAL.						
CORRECTIVE ACTION-Failure was not confirmed. No corrective action taken. However, factory was informed of the result of this failure analysis. Also failure analysis people to be called in to witness a failure in the same mode should one occur.						
PROPELLION INTERFACE-A/B FUEL FEED	SLV-99-20-3063F TRANSDUCER	FAR 69-43203-302	691100	FACTORY	ACOUSTICA	690435
FAILURE MODE-STRUCTURAL. DEFECTIVE CRYSTALLINE STRUCTURE ADJACENT TO SOLDER CONNECTION CAUSED THE FAILURE.						
CORRECTIVE ACTION-VENDOR IMPROVED MATERIALS AND MANUFACTURING TECHNIQUES.						
PROPELLION INTERFACE-A/B FUEL FEED	SLV-99-20-3063F TRANSDUCER	FAR 27-04238-3	691100	FACTORY	ACOUSTICA	690290-12
FAILURE MODE-STRUCTURAL. DEFECTIVE CRYSTALLINE STRUCTURE ADJACENT TO SOLDER CONNECTION CAUSED THE FAILURE.						
CORRECTIVE ACTION-VENDOR IMPROVED MATERIALS AND MANUFACTURING TECHNIQUES.						
PROPELLION INTERFACE-A/B FUEL FEED	CT-A9-06-149 SUSTAINER PREVALVE SEAL	FAR 27-02250-3	6901010	FACTORY	YES STRATON NO	690687
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE DURING FINAL CHECKOUT. LEAKAGE WAS ATTRIBUTED TO EXCESSIVE USE OF ADHESIVE IN THE SEAL GROOVE. THE BODY BORE WAS MACHINED TOO LARGE BY THE VENDOR.						
CORRECTIVE ACTION-RAR CT-A9-06-1110 RECOMMENDS VENDOR BE REQUESTED TO TAKE APPROPRIATE ACTION TO CORRECT DISCREPANCIES FOUND. FINAL ACTION OPEN AS OF DEC. 14, 1966.						

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15 JUN 1966 DIFFICULTIES REVIEW-PROPELLUTION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB - SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF	PRI TIME DIF	OTW VENDOR PART NO	VENDOR NAME
PROPELLUTION INTERFACE-A/B FUEL FEED	60C/22H03-026-DA1097-/LA-TMO-01-71 COMPOSITE-FRD/DPL 11 SEAL	7111 650130		2-4/MALC YES NO			699771
FAILURE MODE-LEAK- EXTERNAL. FUEL LEAK IN UNUSED BOSS JUST ABOVE AIRBORNE FILL AND DRAIN VALVE. SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION--THE PLUG WAS REMOVED AND THE TORUS SEAL WAS REPLACED.							
PROPELLUTION INTERFACE-A/B FUEL FEED	69A4162 FLEX LINE ASSEMBLY, FUEL	UTP-PAT 27-22500-603		650082 FACTORY YES CO/C NO. 27-22500-603			699133
FAILURE MODE-LEAK-EXTERNAL. LEAKAGE APPEARED WHEN THE LINE ASSEMBLY WAS EXPOSED TO THE UNDER-WATER LEAKAGE TEST AT TM 1700 PSIG INTERNAL PRESSURE. A SMALL LEAK WAS LOCATED IN THE 27-22252-7 FITTING. THE RATE WAS MEASURED AT 900 PSI 6 AND WAS 1SCC IN 7 MINUTES.							
CORRECTIVE ACTION-INSPECTION TO REJECT LINE ASSEMBLY FOR Rework. PROBLEM IS INADEQUATE FACTORY QUALITY CONTROL. RAD TOGRAPHIC INSPECTION OF WELD AND/OR LEAK TESTING SHOULD HAVE DETECTED PROBLEM.							
PROPELLUTION INTERFACE-A/B FUEL FEED	69A4365 BOOSTER FUEL PREVALVE	UTP-QUAL/PPT 7-02267-1		650010 FACTORY YES HADLEY NO 10377-1			699113
FAILURE MODE-OUT OF TOLERANCE. DURING PROOF CYCLE FOLLOWING Z-AXIS SINE-RANDOM VIBRATION WITH THE VALVE CLOSED AND PRESSURIZED TO 90 PSIG GND THE VALVE LEAKED 293 SCCH. ALLOWABLE LEAKAGE IS 20 SCCH. REF. S/N 304 T.H. NO. 931-1-001, NO. 4.							
CORRECTIVE ACTION-NONE.							
PROPELLUTION INTERFACE-A/B FUEL FEED	69A4365 BOOSTER FUEL PREVALVE	UTP-QUAL/PPT 7-02267-1		650309 FACTORY YES B.M. MADLEY NO 10377-1			699109
FAILURE MODE-CUT OF TOLERANCE. DURING PROOF CYCLE FOLLOWING Y-AXIS SINE/RANDOM VIBRATION WITH THE VALVE CLOSED AND PRESSURIZED TO 90 PSIG GND THE VALVE LEAKED 92 SCCH. ALLOWABLE LEAKAGE IS 20 SCCH. REF. S/N 304 T.H. NO. 931-1-007, NO -3.							
CORRECTIVE ACTION-NONE.							

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PROPELLION INTERFACE-A/B FUEL FEED	CT-9B-08-138 SUSTAINER PREVALVE SEAL	FAR 7-02281-13	850402	FACTORY YES B.M. HADLEY NO		098166

FAILURE MODE-LEAK-EXTERNAL. UNIT WAS REJECTED FOR EXTERNAL LEAKAGE OF NITROGEN PAST THE END BOLT. LEAKAGE CAUSED BY MISAPPLICATION OF A STATIC SEALING O RING, WHICH HAD EXTRUDED UNDER THE BOLT HEAD.

CORRECTIVE ACTION-SUSTAINER PREVALVE REPLACED WITH AN E SERIES PREVALVE, P/N 27-02250-5.

PROPELLION INTERFACE-A/B FUEL FEED	LV-9B-08-5J11F BOOSTER PREVALVE ACTUATOR BRACKET	FAR 7-022267-15	1960 850310	FACTORY YES B.M. HADLEY NO		0984774
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FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR THE ACTUATOR PISTON JAW NOT RUBBING THE ACTUATOR BRACKET WHEN OPERATED FROM OPEN TO THE CLOSED POSITION. ABOVE CONSIDERED TO BE CAUSED BY AN IMPROPERLY DIMENSIONED VENDOR DRAWING.

CORRECTIVE ACTION-VENDOR WILL REVISE DRAWING FOR ADDITIONAL ORDERS. SURVEY 23-05 CALLED FOR INSPECTION, AND REMAKE AS REQUIRED, OF ALL VALVES. REMOVAL OF ACTUATOR IS UNDER CONSIDERATION.

PROPELLION INTERFACE-A/B FUEL FEED	CT-9B-08-131 STAGING VALVE-FUEL	FAR 7-0E-29-13	1960 850302	36A/ETR YES THOKOL YES 311193		098169
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FAILURE MODE-PREMATURE OPERATION. UNIT SUSPECTED OF PREMATURE DISENGAGEMENT FOR SOME CAUSE, OR LACK OF COMPLETE ENGAGEMENT PERMITTING PARTIAL CLOSING OF THE POPPET AND RESULTANT HIGH DIFFERENTIAL PRESSURE ACROSS THE POPPET. POINT LOAD TESTS INDICATED SUCH A CONDITION YIELDS THE SPIDER BEFORE THE ADAPTER WALLS COLLAPSE. THE LACK OF SPIDER YIELDING, APPARENT IN THE VALVE FROM 1960, INDICATED NO DESTRUCTIVE FORCE WAS APPLIED THROUGH THE POPPET TO THE SPIDER.

PROPELLION INTERFACE-A/B FUEL FEED	CT-9B-08-140 MANIFOLD DUCT	FAR 7-23419	1960 850302	36A/ETR NO 60/C YES		098160
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FAILURE MODE-STRUCTURAL-THIS DUCT WAS ANALYZED TO DETERMINE IF IT CONTAINED ANY PHYSICAL DISCREPANCIES PRIOR TO THE ACCIDENT. ALL ANALYSIS RESULTS SHOW THE DUCT WAS IN ACCORDANCE WITH GD/C BLUEPRINT SPECIFICATIONS. SEE PAR CT-9B-06-131.

CORRECTIVE ACTION-NONE

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	GD/C-BN463-019 FUEL STAGING VALVE	FLIGHT	1960 650302	30A/ETR 1	YES	684768
FAILURE MODE-FAIL DURING OPERATION. FUEL STARVATION TO THE BOOSTER ENGINE WAS POSSIBLY CAUSED BY AN INADVERTENT CLOSING OF THE FUEL STAGING VALVE DUE TO UNDETERMINED CAUSE.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. CLOSURE OF THE STAGING VALVE RESULTED IN FUEL STARVATION OF THE BOOSTER ENGINE.						
VEHICLE EFFECT-PREMATURE BOOSTER ENGINE SHUTDOWN. LOSS OF BOOSTER ENGINE THRUST RESULTED IN PREMATURE FLIGHT TERMINATION AND DESTRUCTION OF THE VEHICLE.						
CORRECTIVE ACTION-A NEW MINIMUM INSTALLED FUEL STAGING VALVE POPPET OPENING OF 1.80 INCHES HAS BEEN ESTABLISHED. AN X-RAY PROCEDURE HAS BEEN INSTITUTED TO DETERMINE FUEL STAGING VALVE POPPET OPENING. A STANDARD 0.125 INCH SPACER IS BEING ADDED TO RAISE THE POPPET IN VEHICLES WHICH HAVE A POPPET OPENING VALUE BELOW THE NEW MINIMUM.						
PROPELLION INTERFACE-A/B FUEL FEED	GD/C-BN463-019 BOOSTER FUEL PREVALVE	FLIGHT	1960 650302	30A/ETR 1	YES	684768
FAILURE MODE-FAIL DURING OPERATION. FUEL STARVATION TO THE BOOSTER ENGINE WAS POSSIBLY CAUSED BY INADVERTENT CLOSING OF THE FUEL PREVALVE. CAUSE OF CLOSING IS UNKNOWN.						
SYSTEM EFFECT-CLOSURE OF THE PREVALVE RESULTED IN FUEL STARVATION OF THE BOOSTER ENGINE.						
VEHICLE EFFECT-PREMATURE BOOSTER ENGINE SHUTDOWN. LOSS OF BOOSTER ENGINE THRUST RESULTED IN PREMATURE FLIGHT TERMINATION AND DESTRUCTION OF THE VEHICLE.						
CORRECTIVE ACTION-THE BOOSTER FUEL PREVALVE HAS BEEN REPLACED BY A MANUAL VALVE AND IS BOLTED IN THE OPEN POSITION. THE SUSTAINER FUEL PREVALVE HAS BEEN REPLACED BY A MANUAL E SERIES VALVE. ALL PNEUMATIC CONTROL OF PREVALVES HAS BEEN DEACTIVATED. ANY ENGINE DRAIN PROCEDURE WITH FUEL IN THE MAIN TANK HAS BEEN DISALLOWED.						
PROPELLION INTERFACE-A/B FUEL FEED	LV-9B-06-3010F DUCT	FAR 7-23419-801	1960 650128	12/ETR NO	YES GD/C	683170
FAILURE MODE-LEAK-EXTERNAL. THE BOOSTER TURBOPUMP DUCT WAS REJECTED FOR AN EXTERNAL LEAK AT A WELD JOINT. CAUSED BY IMPROPER WELDING.						
CORRECTIVE ACTION-OLDING PERSONNEL REQUESTED TO REVIEW WELD SCHEDULES AND ELIMINATE SUCH WELDS IN THE FUTURE.						
PROPELLION INTERFACE-A/B FUEL FEED	BLV-99-06-3002F CHECK VALVE-SPRING	FAR 7-02337-1	7112 641109	FACTORY NO	YES CIRCLE SEAL NO 689A-617	
FAILURE MODE-OUT OF TOLERANCE- START TANK VENT LINE CHECK VALVE REJECTED FOR AN INTERNAL LEAK. THIS WAS CAUSED BY A POPPET SPRING BEING INSTALLED ON THE WRONG SIDE OF THE POPPET. THIS VALVE HAD BEEN REMOVED PER SURVEY 116-64.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO

CORRECTIVE ACTION-FACTORY PERSONNEL CAUTCHED TO USE GREATER CARE IN SUCH INSTANCES.

PROPELLION INTERFACE-A/B SLV-9D-US-300SF VERNIER ENGINE FEED LINE-ORIFICE FAR 60-28122-005 641104 WTR/ETR YES
FUEL FEED . NO

FAILURE MODE-OUT OF TOLERANCE. TEN ELBOW-CRIVICE ASSEMBLIES REJECTED, EIGHT AT WTR AND TWO AT ETR. FOR OFFICE PLAT FORMS, THE TILT, INADEQUATE ROLLOVER AND DAMAGED SURFACES. ABOVE CONFIRMED AND CONSIDERED THE RESULT OF IMPROPER PLANNING, PROCEDURES AND WORKMANSHIP.

CORRECTIVE ACTION-PLANNING, REVISED AND PERSONNEL CAUTIIONED TO USE GREATER CARE IN ASSEMBLY AND INSPECTION OPERATION

PROPELLION INTERFACE-A/D SLV-99-06-300AF
FUEL FEED V/E SUPPLY LINE FLANGE BOLTS FAN 27-22404-3 7112 641103 FACTORY YES GD/C 695176

FAILSAFE MODE-STRUCTURAL-UNIT REJECTED WHEN FIVE OF EIGHT ATTACH BOLTS SHEARED OFF ON REMOVAL. CAUSE WAS DETERMINED TO BE THE RESULT OF USING NO LUBRICANT ON INSTALLATION OF THE STAINLESS STEEL BOLTS IN A STAINLESS STEEL BODY.

FOR ADDITIONAL INFORMATION CALL 1-800-222-1815 OR A LIBRARIAN.

PROPELLION INTERFACE-A/B SLV-9D-D8-3007P TAR 7-02261-13 7105 641026 YES B. H. HADLEY
FUEL FEED SUSTAINER PREVALVE 7-02261-13 641026 NO

FAILURE MODE- FAIL DURING OPERATION. UNIT REJECTED FOR FAILURE TO CLOSE. FAILURE WAS NOT CONFIRMED. HOWEVER, A TORN TEFLON O RING WAS FOUND AND THE LOOSE PIECE COULD HAVE LODGED BETWEEN THE PISTON AND THE END OF THE BORE AND PREVENTED FULL TRAVEL OF THE PISTON.

CONNECTIVE ACTUALIZABLE CAUSE OF FAILURE CAN NOT BE DETERMINED.

PROPELLION INTERFACE-A/B
FUEL FEED LY-9A-06-206F
SUSTAINER PREVALVE SWITCH

15 JUN 1988

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
						693884
	CORRECTIVE ACTION-VENDOR ADVISED MISSING SCREWS WERE THE RESULT OF AN ASSEMBLERS OVERSIGHT.					
PROPELLION INTERFACE-A/B FUEL FEED	SLV-99-06-288F START TANK VENT LINE CHECK VALVE P 7-08337-1 OPPET	FAR 7108 640818	FACTORY NO 684817	YES CIRCLE SEAL		693177
	FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE AFTER REWORK PER SURVEY 118-84. POPPET WAS STUCK BUT SLAMMED S HUT AT 25 PSIG AND OPERATED SATISFACTORILY THEREAFTER. PROBLEM CONSIDERED DUE TO MIGRATORY CONTAMINATION WHICH COULD NOT BE FOUND.					
	CORRECTIVE ACTION-NONE. CONTAMINANT COULD NOT BE FOUND.					
PROPELLION INTERFACE-A/B FUEL FEED	6942845-4 FUEL FILL AND DRAIN VALVE MOTOR	UTP-PRI 7-08315-001	640910 NO 393810-1-1	FACTORY NO 393810-1-1		6931720
	FAILURE MODE-FAIL TO OPERATE. FOLLOWING PRT TEMPERATURE-VIBRATION IN X-AXIS THE BUTTERFLY VALVE MOTOR WOULD NOT OPE RATE. THE MOTOR ARMATURE SHOWED AN OPEN CIRCUIT BETWEEN COMMUTATOR SEGMENTS 4 AND 5 AND 14 AND 15. REF. 3/V 311-0632 T.H. NO. 1.					
	CORRECTIVE ACTION-TE-TESTING STOPPED. NO DESIGN CHANGE INITIATED SINCE VALUE 13 NOT OPERATED IN FLIGHT. REF. RTFN FPR NR F-3348 ST AND F.R. NO. FR 654-2-400.					
PROPELLION INTERFACE-A/B FUEL FEED	69H-1980-2/15989 BOOSTER FUEL SHUT-OFF VALVE, SEAL	UTP-SLT 7-02207-15	640826 NO 10377-15	YES HADLEY NO 10377-15		6931709
	FAILURE MODE-OUT OF TOLERANCE. DURING THE FINAL ACCEPTANCE PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG CN2, THE VALVE LEAKED 315 SCCM. ALLOWABLE LEAKAGE IS 15 SCCM. REPEATED ACTUATIONS OF THE VALVE DID NOT DECREASE THE LEAKAGE. FAILURE ANALYSIS OF THE TEST VALVE REVEALED A DENT IN THE TEFLON BUTTERFLY SEAL. REF. S/N 401-0288 T.H . NO. H43403-11.					
	CORRECTIVE ACTION-TESTING STOPPED. INVESTIGATION INDICATED THE DENT OCCURRED IN HANDLING THE VALVE. THE TEST AGENCY WAS INFORMED OF THE NEED TO IMPROVE THEIR COMPONENT HANDLING PROCEDURES. REF. RTFN FPR NR F-3341-ST AND F.R. 654-2-382.					
PROPELLION INTERFACE-A/B FUEL FEED	69H-1980-2/15989 BOOSTER FUEL SHUT-OFF VALVE	UTP-SLT 7-02207-15	640826 NO 10377-15	YES B.M. HADLEY NO 10377-15		6931715
	FAILURE MODE-OUT OF TOLERANCE. DURING THE POST SLT LOW TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG CN2, THE VALVE LEAKED 300 SCCM. ALLOWABLE LEAKAGE IS 15 SCCM. REF. S/N 401-0288 T.H. NO. H 43 406-10.					

19 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
						690543

CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4341-ST AND FRR NO. FR-654-2-382.

PROPELLION INTERFACE-A/B FUEL FEED	69H-1960.2/15989 BOOSTER FUEL SHUT-OFF VALVE	UTP-PRT 7-02287-15	6400825	YES B.M. HADLEY NO 10377-15	691703
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FAILURE MODE-OUT OF TOLERANCE. DURING THE POST PRT HIGH TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GND, THE VALVE LEAKED 370 SCCH. ALLOWABLE LEAKAGE IS 15 SCCH. REF. S/N 401-0268 T.H. NO. H434-03-9.

CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4341-ST AND FRR NO. FR-654-2-382.

PROPELLION INTERFACE-A/B FUEL FEED	69H-1960.2/15989 BOOSTER FUEL SHUT-OFF VALVE	UTP-PRT 7-02287-15	6400824	YES B.M. HADLEY NO 10377-15	690544
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FAILURE MODE-OUT OF TOLERANCE. DURING THE POST EXPLOSION PROOF TEST PROC CYCLE WITH THE VALVE CLOSED AND PRESSURIZE D TO 10 PSIG GND, THE VALVE LEAKED 50 SCCH. ALLOWABLE LEAKAGE IS 15 SCCH. REF. S/N 401-0268 T.H. NO. H-43405-7.

CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4341-ST AND FRR NO. FR-654-2-382.

PROPELLION INTERFACE-A/B FUEL FEED	69H-1960.2/15989 BOOSTER FUEL SHUT-OFF VALVE	UTP-PRT 7-02287-15	6400821	YES HADLEY NO 10377-15	690545
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FAILURE MODE-OUT OF TOLERANCE. DURING THE POST PRT TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GND, THE VALVE LEAKED 1000 SCCH. ALLOWABLE LEAKAGE IS 15 SCCH. WITH VALVE PRESSURIZED TO 90 PA16 R P-1 FUEL, THE LEAKAGE WAS 37.2 SCCH. ALLOWABLE LEAKAGE IS 20 SCCH. REF. S/N 401-0269 T.H. NO. H43405-8.

CORRECTIVE ACTION-CYCLE VALVE AND RECHECK LEAKAGE. CONTINUE TESTING. REF. RTFN FOR NR F-4341-ST AND FRR NO. FR-654-2-382.

PROPELLION INTERFACE-A/B FUEL FEED	69H-1960.2/15989 BOOSTER FUEL SHUT-OFF VALVE	UTP-PRT 7-02287-15	6400820	YES B.M. HADLEY NO 10377-15	690546
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FAILURE MODE-OUT OF TOLERANCE. DURING THE POST PRT LOW TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GND, THE VALVE LEAKED 25 SCCH. ALLOWABLE LEAKAGE IS 15 SCCH. REF. S/N 401-0268 T.H. NO. H43405-4.

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	990646
CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4341-ST AND FPR NO. FR654-2-382.							
PROPELLION INTERFACE-A/B FUEL FEED	SLV-90-08-291F VERNIER ENGINE SUPPLY LINE ORIFICE 69-22122-603	FAR 640618	7102 WTR	YES 60/C NO			699734
FAILURE MODE-OUT OF TOLERANCE. ELBOW ASSEMBLY REJECTED FOR A LOOSE ORIFICE VALVE. ORIFICE PLATE OUTSIDE DIAMETER WAS UNDER SIZE AND OUT-OF-ROUND AND ORIFICE WAS UNDER SIZE.							
PROPELLION INTERFACE-A/B	CORRECTIVE ACTION-SURVEY 108-64 CHECKED ALL INSTALLED ORIFICES. ORIFICE AND ELBOW REDESIGNED FOR FUTURE INSTALLATIONS.						
PROPELLION INTERFACE-A/B FUEL FEED	69A2C45.3 FUEL FILL AND DRAIN VALVE MOTOR	UTP-PR 7-02313-801	640017 HO	FACTORY 393610-1-1			691719
FAILURE MODE-FAIL TO OPERATE. FOLLOWING PRT TEMPERATURE-VIBRATION IN AXIS 1 VALVE WOULD NOT OPEN DUE TO CONCEALED DAMAGE AT BASE OF MOTOR COVER AND NO CONTINUITY ACROSS THE COMMUTATOR SEGMENTS. BREAKAGE WAS DUE TO THE EXCESSIVE LOADS RESULTING FROM RANDOM-SINE VIBRATION ABOVE DESIGN LEVELS. REF. S/N 310-0630 A.M. NO.1.							
CORRECTIVE ACTION-TESTING STOPPED. NO DESIGN CHANGE INITIATED SINCE VALVE IS NOT OPERATED IN FLIGHT. REF. RTFN FPR NR F-4339 ST AND FPR NO. FR 654-2-241.							
PROPELLION INTERFACE-A/B FUEL FEED	COA/DK/SJ-339/P2-4BH-01-193 BOOSTER FUEL PRE-VALVE, SEAL	COMPOSITE-PRD/DPL 640613	103D 12/ETR	YES NO			697900
FAILURE MODE-LEAK-EXTERNAL. DURING LEAK CHECKS AFTER FUEL TANKING A FUEL LEAK WAS FOUND TO EXIST IN THE BOOSTER PRE-VALVE SEAL.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-COUNTDOWN RESCHEDULED.							
CORRECTIVE ACTION-FUEL WAS DRAINED AND PRE-VALVE SEAL WAS REPLACED.							
PROPELLION INTERFACE-A/B FUEL FEED	LV-98-04-599F BOOSTER PREVALVE GASKET	FAR 7-23637-49	1030 640613	ETR NO	YES 60/C NO		
FAILURE MODE-LEAK-EXTERNAL. PART REJECTED FOR EXTERNAL LEAKAGE AT THE VALVE-TO-TANK PLANCED JOINT. ALTHOUGH THE GAS KEY WAS NICKED AND MARRED THE LEAK WAS CAUSED BY LOW ATTACH BOLT TORQUE.							

15 JUN 1986

GENERAL DYNAMICS
LOX/LOI DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE	PRI DIF OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-FINAL CHECKOUT PERSONNEL WERE REQUESTED TO CHECK BOLT TORQUE AFTER ENGINE GIMBAL LING TESTS.						
PROPELLANT INTERFACE-A/B FUEL FEED	69M-1980-2/159889 BOoster FUEL SHUT-OFF VALVE, SEALANT	UTP-PRT 7-02267-15	640811	YES HADLEY NO 10377-15	081080	
FAILURE MODE-OUT OF TOLERANCE. SUBSEQUENT TO PRT FROM TEMPERATURE AXIS 1 VIBRATION, THE EPOXY RESIN COVERING THE BUTTERFLY RETAINING PINS WAS FOUND SOFTENED, ERODED AND IN TWO LOCATIONS COMPLETELY FREE OF THE HOLES. FAILURE ANALYSIS OF EPOXY REVEALED A LOW SHORE D SCALE HARDNESS READING. REF. S/N 401-0266 T.H. NO. H43403-B.						
CORRECTIVE ACTION-EPOXY REPLACED AND TESTING CONTINUED. ALL PREVALVES OF THIS LOT WERE SURVEYED AND CORRECT EPOXY INSTALLED. REF. RIFN FPN MR F-4356-31, FRR NO. FR 654-2-371, AND SURVEY 151-64.						
PROPELLANT INTERFACE-A/B FUEL FEED	69M-1980-2/159889 BOoster FUEL SHUT-OFF VALVE, SWITCH	UTP-PRT 7-02267-15	640807	FACTORY YES HADLEY NO 10377-15	081070	
FAILURE MODE-PREMATURC OPERATION. DURING THE LAST 40 SECONDS OF PRT ROOM TEMPERATURE AXIS 1 VIBRATION, THE MICROSWITCH INDICATED VALVE CLOSED WHILE THE VALVE WAS STILL OPEN. THE SWITCH COULD NOT BE ACTUATED EXTERNALLY, IT WAS JAHEO. FAILURE ANALYSIS OF FAILED SWITCH DISCLOSED FAILED SWITCH RETAINING PIN. REF. S/N 401-0268 T.H. NO. H-43403-2.						
CORRECTIVE ACTION-TESTING STOPPED. VALVE RETURNED TO VENDOR FOR SWITCH REPLACEMENT AND RETURNED TO TEST LAB. VENDOR QC IMPROVED IN SWITCH MECHANISM AREA. REF. RIFN FOR MR F-4356-31 AND FRR NO. FR 654-2-368.						
PROPELLANT INTERFACE-A/B FUEL FEED	2LV-30-06-294F CHECK VALVE POPPET	FAR 7-02337-1	7102	WTN NO	YES CIRCLE SEAL 6408C4	081086
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE CAUSED BY A STUCK POPPET, PARTIALLY OPEN, BY CONTAMINATION AS RESULT OF USING INVELCO NO.33 LUBRICANT BY THE VENDOR. FIVE OTHER VALVES FROM THIS VENDOR SHOWED EVIDENCE OF SIMILAR CONTAMINATION. 3 OTHER CASES REPORTED IN FAR 8LV-30-06-297F. CHECK VALVE IN START TANK VENT LINE.						
CORRECTIVE ACTION-SURVEY 110-64 REQUIRED REMOVAL OF ALL INVELCO NO.33 LUBRICANT FROM CHECK VALVES. VENDOR CHANGED THE LUBRICANT TO LOX-SAFE AS OF NOV. 1, 1984.						
PROPELLANT INTERFACE-A/B FUEL FEED	69M-1985-2/158889 SUSTAINER FUEL PREVALVE	UTP-SLT 7-02261-15	640722	YES HADLEY NO 10378-15	081088	
FAILURE MODE-OUT OF TOLERANCE. DURING POST "L1" LOW TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIGC2, THE VALVE LEAKED 220 SCCH. ALLOWABLE LEAKAGE IS 15 SCCH. FAILURE ANALYSIS REVEALED THREE SMALL GRASS PARTICLES IMBEDDED IN THE TEFLON SEAL. REF. S/N 408-0268 T.H. NO. H-43402-B.						

19 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SIB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF	SECONDARY DIF	VENDOR NAME VENDOR PART NO
6916663							
PROPELLION INTERFACE-A/B FUEL FEED	69M1926-2/16119 FUEL LINE DISCONNECT	UTP-PRT 27-21158-5	640722	YES GO/C NO 27-21138-5			

CORRECTIVE ACTION-MO BRASS IS USED IN THE VALVE, THEREFORE THE PARTICLES WERE PROBABLY CONVEYED BY THE FUEL USED FOR A PROOF CYCLE. TEST LAB PRECAUTIONS HAVE BEEN TAKEN. REF. FDR NR F-4332-87 AND FRR NO. FR 654-2-352.

PROPELLION INTERFACE-A/B FUEL FEED	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF	SECONDARY DIF	VENDOR NAME VENDOR PART NO
6916664							
PROPELLION INTERFACE-A/B FUEL FEED	69M1925-2/15869 SUSTAINER FUEL PREVALVE	UTP-3LT T-02281-15	640721	YES HADLEY NO 10376-15			

FATURE MODE-STRUCTURAL. DURING HIGH TEMPERATURE (180 DEGREES F) SINUSOIDAL VIBRATION, THE WELDED CROSS MEMBERS SUSTAINED CONSIDERABLE DAMAGE. THE WELD HOLDING THE CAP WAS BROKEN IN TWO PLACES AND THE CROSS MEMBERS TWISTED CONSIDERABLY. REF. S/N 403-0224 T.H. M-43404-1.

CORRECTIVE ACTION-TESTING STOPPED. FAILURE ANALYSIS CONDUCTED. SURVEY NO. 98-64 WAS CONDUCTED ON ALL FUEL STAGING DISCONNECTS TO INSPECT FOR IMPROPER WELDING. MANUFACTURING METHODS AND QUALITY CONTROL WAS IMPROVED. REF. FPR NR F-4331-37 AND FRR-654-2-351.

PROPELLION INTERFACE-A/B FUEL FEED	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF	SECONDARY DIF	VENDOR NAME VENDOR PART NO
6916665							
PROPELLION INTERFACE-A/B FUEL FEED	69A-2312-1 FUEL LINE ASSEMBLY, FUEL	UTP-PAT 27-28250-805	640709	FACTORY YES GO/C NO 27-28250-805			

FATURE MODE-LEAK EXTERNAL. DURING THE POST VIBRATION TEST PROOF CYCLE, THE SPECIMEN LEAKED AS FOLLOWS- A. AT 1800 PSIG, LEAKAGE 125 PSIG IN 30 MINUTES B. AT 650 PSIG, LEAKAGE 30 PSIG IN 60 MINUTES.

CORRECTIVE ACTION-NONE. CONTINUE TESTING.

PROPELLION INTERFACE-A/B FUEL FEED	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF	SECONDARY DIF	VENDOR NAME VENDOR PART NO
6916666							
PROPELLION INTERFACE-A/B FUEL FEED	LV-A9-006-209F FUEL DEPLETION SENSOR CONTROLLER C APACITOR	PAN 640630	1910	FACTORY YES DELAVAN NO 10730			

FATURE MODE-SHORT - ELECTRICAL. UNIT REJECTED FOR FAILURE TO SHOW A DRY INDICATION. FAILURE WAS TRACED TO A SHORT IN A C-9 CAPACITOR.

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1986 DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI DIF	OTR VENDOR PART NO	
							691238
CORRECTIVE ACTION-VENDOR INITIATED 100% PCT INSPECTION OF CAPACITORS UPON RECEIPT AND PRIOR TO SEALING THE UNIT IN THE ENCLOSURE.							
PROPELLION INTERFACE-A/B FUEL FEED	LY-93-08-280F DEPLETION CONTROLLER CAPACITOR	FAR	640328	FACTORY YES DELAVAN NO	696104		
FAILURE MODE-FAIL DURING OPERATION, UNIT REJECTED, DURING AN ENGINEERING EVALUATION TEST, FOR REQUIRING AN EXCESSIVE VOLTAGE INPUT FOR THE REQUIRED OUTPUT. CAUSE WAS DETERMINED TO BE THE RESULT OF CHANGE IN CAPACITOR VALUE. 1 ADDITIONAL CASE REPORTED ON FAR LY-93-08 -287F.							
CORRECTIVE ACTION-CROS AND CKOS CAPACITORS WERE DELETED FROM THE PREFERRED PARTS LIST AND REPLACED BY MIL-C-11015C CERAMIC CAPACITORS.							
PROPELLION INTERFACE-A/B FUEL FEED	21A3337 FUEL FILL AND DRAIN VALVE	UTP-PET 7-02313-801	640327	FACTORY YES AIRESEARCH NO 393610-1-1	691718		
FAILURE MODE-OUT OF TOLERANCE. DURING WATER PROOF TEST FOLLOWING VIBRATION TEST, THE VALVE CLOSING TIME WAS 6.21 SEC C. US MAXIMUM ALLOWED OF 5.00 SECONDS WITH 10 VOLT OPERATING VOLTAGE. NOTE-WATER ENTERED THE ACTUATOR MOTOR THROUGH AN UNSEALLED LOCATOR NOTCH IN THE MOTOR HOUSING. REF. S/NAD3-0864 T.H. NO. 1.							
CORRECTIVE ACTION-THE ACTUATOR MOTOR WAS OPENED AND DRIED PRIOR TO CONTINUING THE TEST. THE WATER SUBMERSION REQUIREMENTS WERE REMOVED FROM THE SPECIFICATION REQUIREMENTS. REF. FPR NR F-5112-SHT AND FRR NO. FR 634-2-309.							
PROPELLION INTERFACE-A/B FUEL FEED	69H-1935-1/15635 SUSTAINER FUEL PREVALVE	UTP-3LT 7-02261-15	640321	OTHER YES D.H. HADLEY NO 10376-15	691668		
FAILURE MODE-OUT OF TOLERANCE. DURING POST LOW-TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GND THE VALVE LEAKED 462 SCCM. ALLOWABLE LEAKAGE IS 15 SCCM. REF. S/N 292 T.H. NO. 2842-12.							
CORRECTIVE ACTION-NONE. EXAMINATION OF THE VALVE DURING THE DCA PROGRAM REVEALED NO ABNORMALITIES. REPORTED FAILURE IS CONTRIBUTED TO POOR TESTING TECHNIQUE. REF. RYNH-FPR NR F-4319-S1 AND FAR NO. FR-634-2-315.							
PROPELLION INTERFACE-A/B FUEL FEED	69H1926-1/15628 FUEL LINE DISCONNECT O-RINGS	UTP-PMT 7-02229-15	640315	OTHER YES THICKOL NO 311183	691700		
FAILURE MODE-FAIL DURING OPERATION. DURING HIGH TEMPERATURE VIBRATION OFFSET CONNECT THE O-RING WAS FORCED OUT OF THE GROOVE AND DAMAGED. DURING THE ENGAGING PORTION OF TEST THE BELLOWS ASSEMBLY OF THE AFT SECTION ASSUMED A SET ON ONE SIDE AFTER IT WAS REMOVED FROM THE FIXTURE. REF. S/N 812-0316 T.H. H-42638-1. ALSO USED ON MA-E SYSTEM (CODE A02).							

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW- PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIFF DATA SOURCE PART NUMBER	VEHICLE DATE DIFF	SITE TIME DIFF	PRI OTH	VENDOR NAME VENDOR PART NO
802125						

CORRECTIVE ACTION-THE O-RING WAS REPLACED AND THE TEST CONTINUED (ERUN). REF. RTPN-FPR NR F-4209-8T AND FRR NO FR-6-14-2-300.

PROPULSION INTERFACE-A/B	69M1980-1/15829 FUEL LINE DISCONNECT SEAL	UTP-PMT 27-21136-3	640515	YES CO/C NO 27-21136-3	691607	
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FAILURE MODE-FAIL DURING OPERATION. DURING HIGH TEMPERATURE VIBRATION OFFSET CONNECT, THE O-RING WAS FORCED OUT OF THE GROOVE AND DAMAGED DURING THE ENGAGING PORTION OF TEST THE BELLOWS ASSEMBLY OF THE AFT SECTION ASSURED A SET ON ONE SIDE AFTER IT WAS REMOVED FROM THE FIXTURE. REF. S/N 308-0214 T.H. NO. H-42039-8.

CORRECTIVE ACTION-THE O-RING WAS REPLACED AND THE TEST CONTINUED (ERUN). REF. RTPN-FPR NR F-4209-8T. AND FRR NO. F-6-14-2-300.

PROPULSION INTERFACE-A/B	69M-1980-1 BOOSTER FUEL SHUT-OFF VALVE	UTP-SLT 7-02287-13	640508	OTHER NO 10377-13	690643	
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FAILURE MODE-OUT OF TOLERANCE. DURING THE POST PROOF PRESSURE PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG CN2, THE VALVE LEAKED 100 SCMH. ALLOWABLE LEAKAGE IS 19 SCMH. REF. S/N 210-0236 T.H. NO. H-43278-14.

CORRECTIVE ACTION-THE UNIT TO UNDERGO FAILURE ANALYSIS. REF. RTPN FPR NR F-4277-8T AND FRR FR-634-2-253-1-279.

PROPULSION INTERFACE-A/B	69M-1980-1 BOOSTER FUEL SHUT-OFF VALVE	UTP-PMT 7-02287-13	640507	YES B. M. HADLEY NO 10377-13	691720	
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FAILURE MODE-OUT OF TOLERANCE. DURING THE POST SAND AND DUST PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG CAN THE VALVE LEAKED 30 SCMH. ALLOWABLE LEAKAGE IS 19 SCMH. REF. S/N 210-0236 T.H. NO. H-43278-9.

CORRECTIVE ACTION-REF. RTPN FPR NR F-4277-8T AND FRR FR 634-2-253- -278.

PROPULSION INTERFACE-A/B	69M-1980-1 BOOSTER FUEL SHUT-OFF VALVE	UTP-SLT 7-02287-13	640507	YES HADLEY NO 10377-13		
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FAILURE MODE-OUT OF TOLERANCE. DURING THE POST BLT-ROOM TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG CAN, THE VALVE LEAKED 160 SCMH. ALLOWABLE LEAKAGE IS 19 SCMH. REF. S/N 810-0236 T.H. NO. H-4-3270-13.

19 JUN 1968

GENERAL DYNAMICS
CONVAIR DIVISION

DIFLUORITIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE:

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	AITE DIF TIME	PRI DIF TIME	PRI VENDOR NAME PART NO
						091722
CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4277-3T AND FRR FPR 654-2-255, -279.						
PROPELLION INTERFACE-A/B 69H-1960.1 FUEL FEED	BOOSTER FUEL SHUT-OFF VALVE	UTP-SLT 7-02267-15	640507			YES B.H.HADLEY NO 10377-15
FAILURE MODE-OUT OF TOLERANCE. DURING THE POST SLT-LOW TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GAGE, THE VALVE LEAKED 300SCCM. ALLOWABLE LEAKAGE IS 15 SCCM. REF. S/N 210-0236 T.H. NO. H-4327-6-12.						
CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4277-3T AND FRR FPR 654-2-255, -279.						
PROPELLION INTERFACE-A/B 69H-1960.1 FUEL FEED	BOOSTER FUEL SHUT-OFF VALVE	UTP-SLT 7-02267-15	640506			YES B.H.HADLEY NO 10377-15
FAILURE MODE-OUT OF TOLERANCE. DURING THE POST SLT-HIGH TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GAGE, THE VALVE LEAKED 300SCCM. ALLOWABLE LEAKAGE IS 15 SCCM. REF. S/N 210-0236 T.H. NO. H-4327-6-11.						
CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4277-3T AND FRR FPR 654-2-255, -279.						
PROPELLION INTERFACE-A/B 69H-1960.1 FUEL FEED	BOOSTER FUEL SHUT-OFF VALVE	UTP-PRT 7-02267-15	640429			YES B.H.HADLEY NO 10377-15
FAILURE MODE-OUT OF TOLERANCE. DURING POST PRT LOW TEMPERATURE-VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GAGE, THE VALVE LEAKED 100 SCCM. ALLOWABLE LEAKAGE IS 15 SCCM. REF. S/N 210-0236 T.H. NO. H-4327-6-11.						
CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4271-3T AND FRR FPR 654-2-255 AND -279.						
PROPELLION INTERFACE-A/B 69H-1960.1 FUEL FEED	BOOSTER FUEL SHUT-OFF VALVE	UTP-PRT 7-02267-15	640429			YES HADLEY NO 10377-15
FAILURE MODE-OUT OF TOLERANCE. DURING POST PRT HIGH TEMPERATURE VIBRATION PROOF CYCLE WITH THE VALVE CLOSED AND PRESSURIZED TO 10 PSIG GAGE, THE VALVE LEAKED 95 SCCM. ALLOWABLE LEAKAGE IS 15 SCCM. REF. S/N 210-0236 T.H. NO. H-4327-6-11.						

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GENERAL DYNAMICS
COMPUTER DIVISION

BRIEF PITCH LINES REVIEWED IN THE INTERFACE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	JITE DIF TIME	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	90M1926-1/15629 FUEL LINE DISCONNECT	UTP-PMT 87-01138-3	640426	YES CO/C NO 27-21138-3		
CORRECTIVE ACTION-NONE. REF. RTFN FPR NR F-4270-81 AND FRR NR 654-2-285, -270.						
FAILURE MODE-LEAK-EXTERNAL. DURING AMBIENT SLOW SPEED SCANNING SHEEP TO SINUSOIDAL VIBRATION THE SPECIMEN AT 220 CPS EMITTED A FINE SPRAY OF RP-1 FUEL FROM THE MATED SURFACES OF THE TWO HALVES OF THE DISCONNECT WHICH BECAME PROGRESSIVELY WORSE UNTIL THE TEST WAS HALTED AT 270 CPS. REF. 6/N 201-0200 T.H. NO. H-42839-3.						
CORRECTIVE ACTION-TEST WAS STOPPED AND NEW TEST SPECIMEN OBTAINED. VIBRATION REQUIREMENTS WERE REVIEWED AND REDUCED - REF. RTFN-FPR NR-F-4255-31 AND FRR NO. 654-2-186.						
PROPELLION INTERFACE-A/B FUEL FEED	69M1926-1/15629 FUEL LINE DISCONNECT	UTP-PMT 7-02289-13	640426	YES TWICKOL NO 311193		
CORRECTIVE ACTION-TEST WAS STOPPED AND NEW TEST SPECIMEN OBTAINED. VIBRATION REQUIREMENTS WERE REVIEWED AND REDUCED - REF. RTFN-FPR NR F-4255-31 AND FRR NO 654-2-196.						
FAILURE MODE-LEAK. DURING AMBIENT SLOW SPEED SCANNING SHEEP OF SINUSOIDAL VIBRATION THE SPECIMEN EMITTED A FINE SPRAY OF RP-1 FUEL FROM THE MATED SURFACES OF THE TWO HALVES OF THE DISCONNECT. LEAK STARTED AT 220 CPS AND BECAME PROGRESSIVELY WORSE. REF 3/N 201-C001, T.H. NO. H-42839-3.						
PROPELLION INTERFACE-A/B FUEL FEED	69A2615-X FUEL FILL AND DRAIN VALVE, MOTOR	UTP-ETT 7-02315-801	642416	FACTORY YES AIRSEARCH NO 393820-1-1		
CORRECTIVE ACTION-TEST STOPPED. NO DESIGN CHANGE INITIATED SINCE FAILURE OF THIS TYPE WOULD NOT CAUSE AN ABORT ON A HAZARDOUS FLIGHT CONDITION. REF. RTFN FPR NR F-4259 81 AND FRR NO. FR 654-2-64-245.						
PROPELLION INTERFACE-A/B FUEL FEED	SLV-98-06-285F BOOSTER FUEL PRE-VALVE, SEAL	FAR 7-02287-13	640402	FACTORY YES B.M. MADLEY NO		
FAILURE MODE-INTERNAL LEAK. DURING UTP PMT TESTING LEAKAGE ACROSS BUTTERFLY SEAL WAS OBSERVED. FAILURE CONFIRMED. A SEAL DAMAGED IN TWO AREAS WITH MOST LIKELY CAUSE OF DAMAGE BEING HANDLING BY TEST LAB PERSONNEL.						

GENERAL DYNAMICS
COMPUTER DIVISION

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DIFFICULTIES REVIEWED IN PROVISION OF INTERPACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REF/PT NUMBER FAILED COMPONENT NAME	QIP DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	69A2645-2 FUEL FILL AND DRAIN VALVE	UTP-FIT 7-02351-001	640408 640350	FACTORY NO	YES	AIRSEARCH NO 35810-1-1
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B FUEL FEED	LV-99-06-275C RISE-OFF DISCONNECT	FAR 27-20410-013	1460 640350	FACTORY NO	YES	60/C
CORRECTIVE ACTION-UNKNOWN.						
PROPELLION INTERFACE-A/B FUEL FEED	69H-1960-1 BOOSTER FUEL SHUT-OFF VALVE	UTP-PAT 7-02287-13	640319 640350	FACTORY NO	YES	HADLEY NO 10577-15
CORRECTIVE ACTION-TESTING STOPPED FOR FAILURE ANALYSIS. SPECIMEN RETURNED TO THE VENDOR FOR REPAIRS. REP. PPN NR F-4198-51. FRN NO FR 654-2-199 AND FAR-SLV-99-06-228-F.						
PROPELLION INTERFACE-A/B FUEL FEED	69H-1960-1 BOOSTER FUEL SHUT-OFF VALVE, SEAL	UTP-PAT 7-02287-13	640317 640350	FACTORY NO	YES	B.M. HADLEY NO 10577-15
CORRECTIVE ACTION-LEAKAGE WAS CAUSED BY A NICK IN THE SEAL. REP. S/N 809-0280 T.H. NO. 43276-3.						

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GENERAL DYNAMICS
COVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPON(H) NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF TIME	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-TESTING STOPPED FOR FAILURE ANALYSIS. THE SPECIMEN WAS RETURNED TO THE VENDOR FOR REPAIRS. REF. P-091036						
PROPELLION INTERFACE-A/B FUEL FEED	SLV-99-05-269F SUSTAINER FUEL PRE-VALVE, SEAL	FAR 7-02261-15	640313	FACTORY	YES	B.H. HADLEY NO
FAILURE MODE-INTERNAL LEAK. DURING UTP PR/SLT RELIABILITY TESTING, THE AND RP-1 LEAKAGE OCCURRED ACROSS BUTTERFLY SEAL. FAILURE UNCONFIRMED. NO LEAKAGE PATHS ACROSS SEAL PACK (REL-F) WERE EVIDENT.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B FUEL FEED	FT48426/P2-4CO-03-263 BOOSTER FUEL PRE-VALVE	COMPOSITE-B FACT 640313	203D 0	12/ETR	YES NO	667693
FAILURE MODE-INTERNAL LEAK-FUEL PUMP INLET PRESSURE MEASUREMENTS INDICATED THAT THE BOOSTER PREVALVE WAS LEAKING ME LIUM.						
SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-PREVALVE REPLACED.						
PROPELLION INTERFACE-A/B FUEL FEED	A464-0010/P1-68N-02-137 INSTRUMENTATION BOSS	COMPOSITE-FRD/DPL 640311	137F 11/ETR	YES NO	667466	
FAILURE MODE-LEAK-EXTERNAL. LEAK AT B1 FUEL PUMP INLET PRESSURE TRANSDUCER DURING SEQUENCE 2 PRESSURE. SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN. ACTION TAKEN PER IR 667693.						
PROPELLION INTERFACE-A/B FUEL FEED	69M-1955.1/19535 SUSTAINER FUEL PRE-VALVE	UTP-PMT 7-02261-15	640306	YES	HADLEY NO	10576-15
FAILURE MODE-OUT OF TOLERANCE. DURING THE POST HIGH TEMPERATURE VIBRATION PROOF CYCLE, WITH THE VALVE CLOSED AND THE CINCH Pressured to 10 PSI G, MEASURED LEAKAGE WAS 780 SCCM. ALLOWABLE IS 15 SCCM. WITH VALVE PRESSURIZED TO 90 PSI, RP-1 FUEL MEASURED LEAKAGE RANGED FROM 14.0 TO 16.0 SCCM. ALLOWABLE LEAKAGE IS 5 SCCM. REF. S/N 298 T.M. NO. 8648-7.						

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GENERAL DYNAMICS
CONVAIR DIVISION

19 JUN 1966 DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-TESTING STOPPED FOR FAILURE ANALYSIS AND THEN CONTINUED. FAILURE COULD NOT BE DUPLICATED AT 60/C LABS. REF. RTFN FPR NR F-4179-87. FAR-SLV-90-08-869-2 AND PRR NR. FN 654-8-18.						091601
PROPELLION INTERFACE-A/B FUEL FEED	09M1028.1/15688 FUEL LINE DISCONNECT	UTP-PRT 7-02288-13	840309	YES THICKOL NO 311193		092187
FATIGUE MODE-LEAK-EXTERNAL. DURING AMBIENT SLOW SPEED SCANNING SWEET OF SINUSOIDAL VIBRATION THE SPECIMEN EMITTED A FINE SPRAY OF RP-1 FUEL FROM THE MATED SURFACES OF THE TWO HALVES OF THE DISCONNECT. THE LEAK STARTED AT 200 CPS. N EF 8/W 201-0301 T.H. NO H-42838-1.						
CORRECTIVE ACTION-NONE. REF. RTFN-FPR NR F-4187-87.						
PROPELLION INTERFACE-A/B FUEL FEED	09M1028.1/15689 FUEL LINE DISCONNECT VALVE	UTP-PRT 87-21136-3	840305	YES 60/C YES 27-21136-3		091648
FATIGUE MODE-LEAK-EXTERNAL. DURING AMBIENT SLOW SPEED SCANNING SWEET OF SINUSOIDAL VIBRATION, THE SPECIMEN STARTING AT 200 CPS. EMITTED A FINE SPRAY OF RP-1 FUEL FROM THE MATED SURFACES OF THE TWO HALVES OF THE DISCONNECT. REF. 8/W 301-0200 T.H. NO. H-42838-1.						
CORRECTIVE ACTION-NONE. REF. RTFN-FPR NR F-4187-87.						
PROPELLION INTERFACE-A/B FUEL FEED	LV-9B-08-271F BOOSTER FUEL PRE-VALVE, SEAL	FAR 7-02287-15	285D 840303	ETR12 YES B-H. MADLEY NO 1037-15		090907
FATIGUE MODE-INTERNAL LEAK. LEAKAGE OCCURRED ACROSS BUTTERFLY SEAL WHILE PERFORMING T/P 27-93522 PROPELLANT LEAK CH FCX8. SEAL DAMAGE EVIDENT BUT SOURCE OF DAMAGE OR CONTAMINATION NOT RESOLVED.						
CORRECTIVE ACTION-NONE-SINCE SOURCE OF DAMAGE WAS NOT ISOLATED.						
PROPELLION INTERFACE-A/B FUEL FEED	A-9D-08-267F FUEL FILL AND DRAIN VALVE, ACTUATO 7-09315-3	FAR 840300	3F YES AIRSEARCH NO			090913
FATIGUE MODE-FAIL TO OPERATE. FAILURE TRACED TO ELEC OPEN IN ACTUATOR MOTOR. FAILURE DETERMINED TO HAVE ORIGINATED EXTERNAL TO VALVE ACTUATOR. PRIMARY FAILURE SOURCE UNDETERMINED. FAILURE OCCURRED DURING X-1 DAY CHECKOUT RESUMING IN MOTOR ARMATURE ELEC OPEN AND BUTTERFLY POSITION INDICATORS INDICATING PARTIAL OPEN,						
CORRECTIVE ACTION-NONE.						
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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	LV-9B-06-268F SELF-SEALING COUPLING HALF, SEAL	FAR 81-66900-072	285D 640221	WTR A-3 NO 7003016	YES E.B. WIGGINS NO	669014
FAILURE MODE-LEAK. LEAKAGE OF 30 DROPS PER MINUTE NOTED FOLLOWING DISCONNECT AFTER COMPLETION OF DPL. FAILURE COMPARED AND ATTRIBUTED TO GROSS CONTAMINATION OF UNIT WITH STAINLESS STEEL PARTICLES RESULTING IN CUTTING OF POPPET SEAL FACE CREATING LEAKAGE PATH.						
CORRECTIVE ACTION-SITE PERSONNEL INVESTIGATED FUEL GROUND SYSTEM FOR CLEANLINESS AND FOUND IT TO BE WITHIN SPEC.						
PROPELLION INTERFACE-A/B FUEL FEED	69H-1935-1/15635 SUSTAINER FUEL PREVALVE	UTP-PRT 7-02281-15	240125 NO 10376-15	YES B.H. HADLEY NO	669046	
FAILURE MODE-OUT OF TOLERANCE. FOLLOWING LOW TEMPERATURE VIBRATION WITH OPEN VALVE FILLED W TH RP-1 AT 90 PSIG THE VALVE CLOSED WHEN LESS THAN 250 PSIG WAS APPLIED TO THE ACTUATOR CLOSE PORT. REF. S/N 282 T.H. NO. 2842-5.						
CORRECTIVE ACTION-TEST STOPPED FOR PROCEDURE REVIEW AND THEN CONTINUED. INVESTIGATION OF SPECIFICATION REVEALED AN IMPROPER INTERPRETATION OF SPEC REQUIREMENTS AND WAS REFLECTED IN THE TEST PROCEDURE. REF. RTFN-FTR NR F-4140-3T, ME NO 662-6, DUH-019 AND FRR NO. FR 654-2-155.						
PROPELLION INTERFACE-A/B FUEL FEED	69H-1935-1/15635 SUSTAINER FUEL PREVALVE	UTP-PRT 7-02281-15	640116 NO 10376-15	YES B.H. HADLEY NO	669048	
FAILURE MODE-OUT OF TOLERANCE. DURING PROOF CYCLE WITH THE VALVE IN CLOSED POSITION WITH THE INLET SIDE PRESSURIZED WITH 90 PSIG RP-1 FUEL UNDER AMBIENT CONDITIONS, THE VALVE LEAKED FROM 13.5 TO 1200 SCMH. ALLOWABLE LEAKAGE IS 9 SC CM. REF. S/N 282 T.H. NO. 2842-3.						
CORRECTIVE ACTION-TEST REPEATED BUT FAILURE COULD NOT BE DUPLICATED. TESTING CONTINUED. REF. RTFN-FTR NR F-4139-3T.						
PROPELLION INTERFACE-A/B FUEL FEED	LV-9B-06-262F GASKET, BOOSTER PRE-VALVE	FAR 7-23237-21	1980 640108	ETR12 NO	YES NO	669013
FAILURE MODE-LEAKAGE EXTERNAL. UNDETERMINED QUANTITY OF LEAKAGE PAST SEAL CAUSED BY WEARING OF KEL-F ON SEALING SURFACE. CAUSE OF WEAR UNDETERMINED BUT COULD BE CAUSED BY CHINALLING OF ENGINE, WITH LOOSE FLANGE BOLTS AT INTERFACE WHERE GASKET IS EMPLOYED. (FUEL BOOSTER PRE-VALVE)						
CORRECTIVE ACTION-AMP PERSONNEL PURGED AND REPLACED STOCK WITH CURRENT PRODUCTION RUN. (APRIL 1968).						

GENERAL DYNAMICS
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM		TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED		AAB-002E/P1-4BN-01-189 VALVE-PRE-BOOSTER FUEL	COMPOSITE-FRD/OPL 1980 840108	12/ETR	YES NO		697466
			7-21237-049				
		FAILURE MODE-LEAK-EXTERNAL. LEAK OBSERVED AT BOOSTER PRE-VALVE DURING SEQUENCE TWO PRESSURIZATION. SYSTEM EFFECT-NONE.					
		VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED. LOZ TANKING NOT CONDUCTED UNTIL NEXT DAY AFTER FUEL LEAK REPAIRED					
		CORRECTIVE ACTION-DETANKE FUEL AND REPAIRED LEAK. REFERENCE IR 69201 AND 69202. REPLACED GASKETS IN BOTH FLANGES					
PROPELLION INTERFACE-A/B FUEL FEED		A-99-06-258F MAIN SUSTAINER FUEL DUCT, BELLOWS	FAR 7-22232-073	VARIOUS 84C100	FACTORY NO	YES NO	699010
		FAILURE MODE-CONTAMINATION (CORROSION). 37 INSTANCES OF CORRODED BELLOWS ARE COVERED IN THIS FAR. DEGREE OF CORROSION RANGED FROM SUPERFICIAL TO DEEP Pitting ON THE INNER AND OUTER PLIES OF THE BELLOWS. PROBLEM ATTRIBUTED TO DESIGN, MANUFACTURING PROCESSES, AND OPERATIONAL ENVIRONMENT.					
		CORRECTIVE ACTION-ECP 7871 APPROV'D, 31 AUG, 1964. REDESIGNED BELLOWS TO ELIMINATE BLEED OR WEEP HOLES. ALSO, THE BELLOWS VENDOR (SOLAR AIRCRAFT) MODIFIED MFG PROCEDURES TO PRECLUDE ENTRAPMENT OF CORROSION BEARING SOLUTION BETWEEN BELLOWS PLIES DURING MANUFACTURING.					
PROPELLION INTERFACE-A/B FUEL FEED		COA85-1374/A1-401-00-233	FLIGHT TANK-FUEL	2330 831218	A-1/WTR 136PL/JS	YES NO	691631
		FAILURE MODE-ERRATIC OPERATION. THE ENGINE FUEL TANK PRESSURE EVIDENCED OSCILLATIONS FOR 22 SECONDS AFTER TANK RE-PRESSURIZATION AND AGAIN DURING VERNIER SOLO OPERATIONAL PERIOD. THE CAUSE IS NOT KNOWN. MAXIMUM OSCILLATIONS WERE 30 PSID PEAK-TO-PEAK.					
		SYSTEM EFFECT-NONE.					
		VEHICLE EFFECT-NONE.					
		CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.					
PROPELLION INTERFACE-A/B FUEL FEED		AAB-0037/P1-6BN-01-137 INSTRUMENTATION BOB&	COMPOSITE-FRD/OPL 1977 831210	11/ETR 27-1101-033	YES NO		
		FAILURE MODE-LEAK-EXTERNAL. LEAK AT B1 FUEL PUMP INLET PRESSURE TRANSDUCER DURING SEQUENCE 2 PRESSURE.					
		SYSTEM EFFECT-NONE.					

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1966 DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	ALTE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
VEHICLE E/F. ECT-1-NONE.						697467
CORRECTIVE ACTION-UNKNOWN ACTION TAKEN PER IR 601093.						
PROPELLION INTERFACE-A/B FUEL FEED	A-98-06-835P FUEL PRE-VALVE	FAR 27-21200-003	631003	137F	ETR12	YES NO
FAILURE MODE-INTERNAL LEAK-UNKNOWN QUANTITY OF FUEL LEAKAGE DURING CHECKOUT AT COMPLEX 12. FAILURE UNCONFIRMED.						
CORRECTIVE ACTION-INFORMATION ON FAR A-98-06-3863 ISSUED REQUESTING CAREFUL HANDLING OF THIS TYPE UNIT BY AFFECTION PERSONNEL.						
PROPELLION INTERFACE-A/B FUEL FEED	LV-90-06-253F FUEL MANIFOLD	FAR 7-23419-001	631183	350D	WTR	YES CO/C NO 7-23419-001
FAILURE MODE-LEAKAGE EXTERNAL. UNKNOWN QUANTITY OF FUEL LEAKAGE THROUGH WELD JOINT. ATTRIBUTED TO INITIAL HOT TEAR IN WELD JOINT DURING FABRICATION CULMINATING IN EVENTUAL FATIGUE FAILURE. ADDITIONAL CASE REPORTED ON FAR LV-90-06-247F.						
CORRECTIVE ACTION-REDESIGN OF FILLET WELD AREA TO ALLOW DEEPER PENETRATION. ECN 359539 RELEASED 2 JUNE 1964.						
PROPELLION INTERFACE-A/B FUEL FEED	69A2645 FUEL TILL AND DRAIN VALVE, SWITCH	UTP-SLT 7-02319-001	631026	FACTORY	YES AIRSEARCH NO 393610-1-1	691718
FAILURE MODE-FAIL TO OPERATE. FOLLOWING ALT TEMPERATURE VIBRATION IN ONE AXIS, VALVE WOULD NOT OPERATE PROPERLY IN BOTH OPEN AND CLOSE POSITIONS. IT ALSO INDICATED LACK OF CONTINUITY THROUGH THE OPEN AND CLOSE LIMIT SWITCHES. SWITCH CONTACT BAR WAS FOUND BROKEN. REF. S/N P-104-3-06-0394 T.H. NO. 2.						
CORRECTIVE ACTION-TESTING STOPPED. FAILURE INVESTIGATION CONDUCTED. NO REDESIGN BECAUSE FAILURE WOULD NOT CAUSE ABORT OR FLIGHT FAILURE. HARDWARE ACCEPTABLE FOR FLIGHT. REF. RPN FPR NR F-0047 AT, AND FAR NO FR 63-2-0-3.						
PROPELLION INTERFACE-A/B FUEL FEED	69A2645 FUEL FILL AND DRAIN VALVE	UTP-PRT 7-02313-001	631025	FACTORY	YES AIRSEARCH NO 393610-1-1	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. DURING PRT PROOF PRESSURE TEST THE VALVE WOULD NOT CLOSE PROPERLY UPON ACTUATION UNTIL THE HOUSING WAS LIGHTLY TAPPED. UNIT WAS AT ROOM AMBIENT CONDITIONS WITH 20 VOC APPLIED. REF. S/N P-104-3-06-0394 T.H. NO. 1.						

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**GENERAL DYNAMICS
COVAIR DIVISION**

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE	PAT	VENDOR NAME
DATE DIFF	TIME DIFF	OTH	VENDOR PART NO			
PROPELLION INTERFACE-A/B FUEL FEED	LV-SD-06-234F SUSTAINER PREVALVE ACTUATOR	FAR 7-02261-15	2010 630702	FALC 2-3	YES B.H. MADLEY NO	694309
FAILURE MODE-FERRATIC OPERATION. REJECTED FOR CHATTERING AND SPASMODIC MOTION OF THE ACTUATOR WHILE CLOSING. THIS CONDITION IS CONSIDERED TO BE THE RESULT OF DIMENSIONAL TOLERANCE BUILDUP CAUSING INTERFERENCE BETWEEN THE PISTON, DETENT BALLS AND THE SLEEVE.						
CORRECTIVE ACTION-VENDOR REVISED DIMENSIONAL TOLERANCES TO PREVENT THIS PROBLEM IN FUTURE.						
PROPELLION INTERFACE-A/B FUEL FEED	A-9B-06-205F BOOSTER DUCT	FAR 27-11107-603	134F 630612	STR	YES GD/C NO	694304
FAILURE MODE-EXTERNAL LEAKAGE. LEAKAGE CONFIRMED AND OBSERVED TO ORIGINATE IN THE BELLows SECTION. CAUSE OF LEAKAGE WAS CHEMICAL CORROSION THROUGH THE INNER BELLows, ALLOWING FUEL TO EXIT FROM THE EXTERnAL BELLows VENT HOLE.						
CORRECTIVE ACTION-VENDOR AND GD/C CLEANING PROCESSES REVIEWED AND PERSONNEL CAUTIOnED TO USE EXTREME CARE IN PROCESSING THE BELLows.						
PROPELLION INTERFACE-A/B FUEL FEED	M2-SD-06-233F SUSTAINER PREVALVE-SEAL	FAR 7-02261-15	1980 630602	WTR	YES B.H. MADLEY NO	694300
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE CAUSED BY A SMALL DEPRESSION IN THE SEAL. THE DEPRESSION IS CONSIDERED THE RESULT OF CARELESS HANDLING.						
CORRECTIVE ACTION-REFERRED SITE PERSONNEL TO REQUIREMENTS OF CLOSING VALVE PRIOR TO REMOVAL.						
PROPELLION INTERFACE-A/B FUEL FEED	SP 9-06-212F PREVALVE, BOOSTER-SEAL	FAR 7-02267-15	139D 630323	WTR	YES B.H. MADLEY NO	694309
FAILURE MODE-LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE. LEAKAGE NOT CONFIRMED.						
CORRECTIVE ACTION-LEAKAGE NOT CONFIRMED. NO CORRECTIVE TAKEN.						

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GENERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	A-99-06-230F SUSTAINER PREVALVE-SEAL	FAR 27-02230-6	70E 830381	FACTORY NO	YES STRATO	694314
FAILURE MODE-LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE CAUSED BY AN UNDERSIZE SEAL.						
CORRECTIVE ACTION-VENDOR FOUND OTHER SEALS IN STOCK WHICH WERE UNDERSIZE. SEAL VENDOR TOOK ACTION TO PREVENT FUTURE OCCURRENCES.						
PROPELLION INTERFACE-A/B FUEL FEED	A-99-06-211C PREVALVE, BOOSTER	FAR 27-02230-5	62E 830308	FACTORY NO	YES STRATO	694306
FAILURE MODE-LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE. NO FAILURE ANALYSIS PERFORMED DUE TO LACK OF FUNDING FOR FACTORY PROBLEMS.						
CORRECTIVE ACTION-NO FAILURE ANALYSIS PERFORMED. NO CORRECTIVE ACTION TAKEN.						
PROPELLION INTERFACE-A/B FUEL FEED	AD63-00670/923/L2-480-06-119 PRE-VALVE	COMPOSITE-PRO/DPL	1190 830304	1-2/PALC NO	NO	697810
FAILURE MODE-EXTERNAL LEAKAGE. BOOSTER FUEL PRE-VALVE FLANGE LEAK. SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE.						
PROPELLION INTERFACE-A/B FUEL FEED	SP-90-06-273F PREVALVE, BOOSTER-FLANGE	FAR 7-02237-15	1190 830304	1-2/PALC NO	YES B.H. HADLEY NO	694310
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR EXTERNAL LEAKAGE AT THE TANK MOUNTING FLANGE AS RESULT OF TWO ATTACH BOLTS BEING FINGER TIGHT. LOW BOLT TORQUE ATTRIBUTED TO STRESS RELAXATION OF ALUMINUM THREADED MATERIAL AS RESULT OF ADHERMAL TESTS OF THE VEHICLE AND/OR INCORRECTLY TORQUED BOLTS AT ORIGINAL INSTALLATION. LEAKAGE WAS ALSO FOUND AT THE FLANGED JOINT BETWEEN THE PREVALVE AND THE STAGING VALVE, DUE TO LOW TORQUE ON THE ATTACH BOLTS, AS REPORTED ON P AR SP-PD-06-224P.						
CORRECTIVE ACTION-SITE PERSONNEL RETORCHED ALL BOLTS TO PROPER VALUE. APPROPRIATE PERSONNEL REQUESTED TO INSPECT & REAFTER CARE IN TORQUING THE ATTACH BOLTS DURING VALVE INSTALLATION.						

GENERAL DYNAMICS
CONVAIR DIVISION

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B FUEL FEED	SP-90-06-225F HOSE ASSEMBLY, BOOSTER IGNITER-B # 27-02109-3 UT	FAN	1190 010427	1-2/PALC YES 60/C NO		
	FAILURE MODE-LEAK-EXTERNAL. FUEL WAS FOUND LEAKING AT THE B-NUT CONNECTING THE HOSE TO THE BOOT STRAP CHECK VALVE. TORQUE ON THE B-NUT WAS FOUND TO BE LOW AND ATTRIBUTABLE TO STRESS RELAXATION DURING TRANSPORTATION AND THE ABNORMAL TESTS TO WHICH THE VEHICLE WAS SUBJECTED, OR APPLICATION OF IMPROPER TORQUE AT INSTALLATION.					
	CORRECTIVE ACTION-SITE PERSONNEL RETORQUED B-NUT TO PROPER VALUE AND LEAK STOPPED. APPROPRIATE FACTORY PERSONNEL REQUESTED TO EXERCISE CARE IN TORQUING B-NUTS.					
PROPULSION INTERFACE-A/B FUEL FEED	SP-90-06-226F BOOSTER GAS GENERATOR LINE, B-NUT 27-22413-3	FAN 03-0426	1110 03-0426	1-2/PALC YES 60/C NO		
	FAILURE MODE-LEAK-EXTERNAL. INDICATIONS OF FUEL LEAK FOUND AT START LINE B-NUT DUE TO LOW TORQUE, ATTRIBUTED TO EFFECTS OF TRANSPORTATION, ABNORMAL VEHICLE TESTS, AND/OR IMPROPER TORQUE APPLICATION AT INSTALLATION.					
	CORRECTIVE ACTION-SITE PERSONNEL RETORQUED B-NUT AND LEAK STOPPED. FACTORY PERSONNEL REQUESTED TO EXERCISE GREATER CARE IN TORQUING B-NUTS.					
PROPULSION INTERFACE-A/B FUEL FEED	SP-90-06-226F IGNITER VALVE/HOSE, B-NUT	FAN ET-02171-S 03-0418	1190 03-0418	1-2/PALC YES 60/C NO		
	FAILURE MODE-LEAK-EXTERNAL. B-NUT FUEL LEAK DISCOVERED DURING SYSTEM CHECK. LOW TORQUE ON B-NUT WAS CAUSE OF LEAK, ATTRIBUTED TO EFFECTS OF TRANSPORTATION, ABNORMAL VEHICLE TESTS AND/OR APPLICATION OF IMPROPER TORQUE DURING INSTALLATION.					
PROPULSION INTERFACE-A/B FUEL FEED	A-90-06-194F V/E TUBE,RIGID	FAN ET-24007-7 03-0420	616 03-0420	1-2/PALC YES 60/C NO		
	FAILURE MODE-STRUCTURAL, UNIT REJECTED FOR BEING CRACKED. TUBE CONTAINED A 1/2 INCH LONG CRACK IN A 60 DEGREE BEND, 6 INCHES FROM THE TUBE END. ANALYSIS INDICATED ELECTROLYTIC ACTION BETWEEN THE ALUMINUM FAILED TUBE AND A STAINLESS STEEL LINE IN COMBINATION WITH SALT AIR ATMOSPHERE.					
	CORRECTIVE ACTION-ALL VEHICLES UNDER 60/C CONTROL WERE INSPECTED FOR EVIDENCE OF THE ABOVE CONDITION.					

GENERAL DYNAMICS
CONVAIR DIVISION

13 JUN 1988

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI DIF	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B FUEL FEED	A-90-06-188F PRE-VALVE BELLOWS	FAR 27-02908-1	633128	FACTORY NO	YES CIRCLE WELD NO	098464
FAILURE MODE-LEAK-EXTERNAL. THREE UNITS FAILED HYDROSTATIC TEST. FAILURE WAS RESULT OF CHLORIDE RESIDUES COMBINING WITH MOISTURE, FORMING AN ACID WHICH ATTACK THE BELLOWS MATERIAL TO THE POINT OF PENETRATION, CAUSING A LEAK. 30 DELONS AT VENDORS PLANT FOUND IN SIMILAR CONDITION. 1 OTHER CASE REPORTED ON FAR A-98-06-208F.						
CORRECTIVE ACTION-VENDOR REVISED HIS PROCEDURES TO BAKE THE BELLOWS, TO REMOVE MOISTURE, AND THEN SEAL IN PLASTIC CONTAINERS. ALL BASES WERE INSTRUCTED TO REPLACE ALL SUCH BELLOWS. RECEIVING INSPECTION BEGAN CHECKING ALL BELLOWS RECEIVED FOR PRESENCE OF CHLORIDE RESIDUE.						
PROPULSION INTERFACE-A/R FUEL FEED	SP-90-06-195F PREVALVE, BOOSTER FUEL ACTIVATOR	FAR 7-02267-15	2273 62	WTR 220	YES HADLEY NO	098217
FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR GAS LEAKAGE FROM THE ACTUATOR VALVE-OPEN PORT WITH PRESSURE APPLIED TO THE VALVE-CLOSED PORT. FAILURE CONFIRMED AND CAUSED BY INCORRECT ASSEMBLY OF THE ACTUATOR LOCKING MECHANISM.						
CORRECTIVE ACTION-VENDOR PERSONNEL ALERTED TO PROBLEM AND REQUESTED TO BE MORE DILIGENT.						
PROPULSION INTERFACE-A/B FUEL FEED	A-90-06-184F BOOSTER LINE-FLEX-BOSS	FAR 27-21103-807	621127	FACTORY NO	YES 60/C NO	098220
FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR PARENT MATERIAL CRACKING ADJACENT TO A FUSION WELD JOINING A BOSS TO AN EL BOMB. CRACKING WAS THE RESULT OF HIGH RESIDUAL STRESSES DUE TO COLD WORKING, PREFERENTIAL ETCHING DURING CLEANING, LACK OF PRE-HEAT AND POST-HEAT OF COMPONENTS AND LACK OF PROPER BACKUP AND HOLDING FIXTURES.						
CORRECTIVE ACTION-A RESEARCH PROGRAM DEVELOPED IMPROVED WELDING TECHNIQUES OVER THOSE OUTLINED ABOVE.						
PROPULSION INTERFACE-A/B FUEL FEED	A-90-06-189F SUSTAINER PRE-VALVE	FAR 27-02250-1	646 601110	COTPI/WT YES STRATO R NO	098222	
FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE.						
CORRECTIVE ACTION-NONE. FAILURE NOT CONFIRMED.						

GENERAL DYNAMICS
CONVAIR DIVISION

15 JUN 1986 DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE	SITE DATE DIF	TIME DIF	OTN	PRI VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	A-110-06-117D TUBE ASSEMBLY, VSE B-NUT	FAR 87-240077-7 AND-9	75F BYC.	YES	SD/C	NO	090400
FAILURE MODE-STRUCTURAL-UNIT REJECTED FOR A CRACKED B-NUT. INVESTIGATION REVEALED STRESS-CORROSION CRACKING OF 261 4 OR 2017 ALUMINUM ALLOY. 7 ADDITIONAL CASES REPORTED IN FAR 80-06-133F, -180, -186, -187, -188, -217, CT-98-0 6-041F, -042F, -041C, -042C.							
CORRECTIVE ACTION-ALL AFFECTED PERSONNEL CAUTIONED ON USE OF PROPER TORQUE VALUES. MIL-F-9309A AMENDMENT 7, JAN. 12 1983. RESTRICTS USE OF ALUMINUM ALLOYS FOR SUCH PARTS TO 6061 OR 5124, T-6 CONDITION OR BETTER.							
PROPELLION INTERFACE-A/B FUEL FEED	A-98-06-192F VALVE, RESIDUAL DRAIN	FAR 881111	PLATO	YES	KOCHLER	NO	090200
FAILURE MODE-LEAK-EXTERNAL-UNIT WAS REJECTED FOR LEAKAGE.							
CORRECTIVE ACTION-NONE. FAILURE NOT CONFIRMED.							
PROPELLION INTERFACE-A/B FUEL FEED	A-98-06-203C SUSTAINER DUCT	FAR 87-22230-901	16F 821107	11/ETR	YES	SD/C	090400
FAILURE MODE-LEAK-EXTERNAL-UNIT REJECTED FOR LEAKAGE. NO FAILURE ANALYSIS PERFORMED DUE TO LACK OF FUNDING.							
CORRECTIVE ACTION-NONE. NO FAILURE ANALYSIS PERFORMED.							
PROPELLION INTERFACE-A/B FUEL FEED	A-90-06-191F SUSTAINER PREVALVE, SEAL	FAR 87-02250-1	84E 821026	08171/NY	YES	STRATOS	090400
FAILURE MODE-LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE. FAILURE ANALYSIS NOT PERFORMED SINCE VALVE WAS RECEIVED IN TW THE SEAL ROLLED OUT OF ITS GROOVE, ATTRIBUTED TO HIGH FRICTION BETWEEN THE SEAL AND VALVE. THIS ATTRIBUTED TO FUEL MOVING THE LUBRICANT FROM THE SEAL. 1 ADDITIONAL CASE REPORTED ON FAR 87-06-093.							
CORRECTIVE ACTION-ECP1981, DATED JAN. 16, 1983, CHANGES THE SODIUM BETWEEN THE SEAL GROOVE AND SEAL AND COATS THE VAL WE INNER WALLS WITH TEFLON.							

15 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DEF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI DIF OTH	VENDOR NAME VENDOR PART NO	198407
PROPELLION INTERFACE-A/B FUEL FEED	A-SD-06-166 BOoster PREVALVE SEAL	FAR 27-21200-803	620607	SAFB	YES NO/C	NO	

FAILURE MODE-INTERNAL LEAKAGE. LEAKAGE CONFIRMED AND CAUSED BY A METAL CHIP ATTACHED TO THE SEALING EDGE OF THE BUTTERFLY CLOSURE. 2 OTHER UNCONFIRMED REPORTS COVERED ON PAR-9M-06 -187, -187.

CORRECTIVE ACTION-ALL PROCESSES AND PROCEDURES FOR POSSIBLE IMPROVEMENT, AS RESULT A DRAWING CHANGE ADDED A REQUIREMENT TO APPLY TORQUE PAINT TO THE OPEN-CLOSE INDICATOR TO INDICATE ANY OPENING OF THE VALVE AFTER FUNCTIONAL TESTING.

PROPELLION INTERFACE-A/B FUEL FEED	A-90-06-178F FILL AND DRAIN VALVE O-RING	FAR 7-02315-5	65F	DAFB	YES AIRSEARCH	090217
		620731		NO		

FAILURE MODE-LEAK. UNIT REJECTED FOR INTERNAL LEAKAGE PAST THE BUTTERFLY SEAL. FAILURE CONFIRMED AND ATTRIBUTED TO A DAMAGED O RING PARTIALLY EXTRUDED FROM ITS GROOVE.

CORRECTIVE ACTION-VALVE SEAL ARRANGEMENT REDESIGNED UNDER ECP 1930-1, -2, -3, ECP 512TR1 AND ECP712. VALVE IDENTIFIED AS P/N7-02315-801.

PROPELLION INTERFACE-A/B FUEL FEED	A-98-06-159 LINE BELLOWS	FAR 27-22404-1	145D	ETR	YES NO/C	090220
		620718		NO		

FAILURE MODE-STRUCTURAL. UNIT REJECTED FOR EXTERNAL LEAKAGE. LEAKAGE CONFIRMED AND CAUSE FROM A WELD PIN HOLE, CAUSED BY WELD POROSITY.

CORRECTIVE ACTION-ASSEMBLY PLANNING AND INSPECTION PROCEDURES REVIEWED AND CONSIDERED SATISFACTORY. 100 PERCENT XRAY INSPECTION IS NOT WARRANTED IN VIEW OF COSTS AND RANDOM NATURE OF FAILURE.

PROPELLION INTERFACE-A/B FUEL FEED	A-SD-06-165 LINE ASSEMBLY, SEAL	FAR 27-22404-1	184D	WTR	YES	090220
		620718		NO		

FAILURE MODE-LEAK-EXTERNAL. UNIT REJECTED FOR AN EXTERNAL LEAK AT THE FLANGE. LEAKAGE CONFIRMED AND ATTRIBUTED TO A NECKING DOWN OF THE TORUSSEAL AT THE WELD JOINT.

CORRECTIVE ACTION-VENDOR INITIATED 100 PCY INSPECTION TO INSURE PROPER CROSS SECTION AT THE WELD.

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**DIFFICULTIES REVIEW- PROPULSION INTERFACE SYSTEM-AIRBORNE
GENERAL DYNAMICS
CONVAIR DIVISION**

GENERAL DYNAMICS
COMMUNICATIVE DIVISION

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A REVIEW OF THE INFLUENCE OF THE INTERFACE DESIGN ON THE USE OF COMPUTER SYSTEMS

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE TIME	PRI DIF	VENOR NAME OTH VENOR PART NO

PROTECTIVE ACTION MEASURE DESIGNATED TIME VALUE TO IMPOSE A TEE-OON SEAL IN THE AFFECTION AREA:

PROPELLION INTERFACE-A/B A-9D-06-155 FAIR 13F YES
FUEL FED BOOSTER PRE-VALVE 27-21200-003 620416 NO

FAILURE MODE-LEAK-UNIT REJECTED FOR INTERNAL LEAKAGE. LEAKAGE CONFIRMED AND CAUSED BY A METAL CHIP ATTACHED TO THE

CORRECTIVE ACTION-SPECIFICATIONS AND PROCEDURES REGARDING CLEANLINESS REVISED, RESULTING IN RELOCATING THE PREVAL

PROPELLION INTERFACE-A/B HG-9E-06-129 PREVALVE, SUSTAINER FAN 7-02281-15 1070 ETR YES B.M. HADLEY
FUEL FEED 62024 NO

THE JOURNAL OF CLIMATE

IT-OP-0103 INTERFACE A/B A-9F-D06-119 SUSTAINABLE PREVALVE DRING FAR 580 860313 YES R.H.HADLEY
CIVIL TECH 7-0226A1-19 NO

FAILURE MODE-EXTERNAL LEAK. UNIT WAS REJECTED FOR FAILURE TO CLOSE. FAILURE CAUSED BY EXTERNAL LEAKAGE IN THE UNLOCKING PRESSURE SYSTEM DUE TO A SHREDDED O RING. FAILURE CONCLUDED TO BE THE RESULT OF AN UNKNOWN NUMBER OF VALVING CYCLES.

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PROPELLION INTERFACE-A/T A-BN-06-116 FAR 27-81200-1 FF 002007 ETR NO YES CONVAIR 00000

FAILURE MODE-EXTERNAL LEAK-UNIT REJECTED FOR EXTERNAL LEAKAGE FROM RELEASE ASSEMBLY BELLOWS. LEAKAGE WAS COMING FROM A WORN MOLDED RUBBER GASKET. CAUSE CORROSION, AS RESULT OF RESIDUAL SOLDERING FLUX IN THE AREA OF THE BOLTED JOINT.

RECENT INVESTIGATIONS AND PRACTICE REMOVAL

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**GENERAL DYNAMICS
CONVAIR DIVISION**

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRCRAFT

GENERAL DYNAMICS

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DIFFUSION-TYPE REVIEW PROCEDURES IN SYSTEM-A INFORMATION

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B FUEL FEED	A-9B-06-109 VERNIER FUEL SUPPLY HOSE ASSEMBLY SEAL	FAR VERNIER FUEL SUPPLY HOSE ASSEMBLY SEAL 27-02403-003	6R0131	BYC.	NO	COSMIC YES
FAILURE MODE-EXTERNAL LEAK- UNIT REJECTED FOR FUEL SEEPAGE PAST THE FLANGE SEAL. FAILURE COULD NOT BE CONFIRMED DUE TO LACK OF MATING MA- PART- HOWEVER, SEAL GROOVE HAD PROPER DIMENSIONS. CONCLUDED THAT HOSE DID NOT FAIL- AND, THE MATING MA PART CAUSED THE FAILURE DUE TO AN IMPROPER SEAL GROOVE.						
CORRECTIVE ACTION-EO/C REQUESTED ROCKETDYNE, BY TWR SN641B, TO REDIMENSION AND RERORK THEIR PART.						
PROPULSION INTERFACE-A/B FUEL FEED	A-9B-06-106 VERNIER FUEL SUPPLY HOSE ASSEMBLY, SEAL	FAR VERNIER FUEL SUPPLY HOSE ASSEMBLY, SEAL 27-02403-001	6R0123	11/EVR	YES	COSMIC NO
FAILURE MODE-EXTERNAL LEAK-UNIT REJECTED FOR FUEL SEEPING PAST THE FLANGE SEAL. REPLACEMENT HOSE LEAKED IN A SIMILAR MANNER. FAILURE NOT CONFIRMED DUE TO LACK OF MATING PART (MA). FAILURE CONCLUDED TO BE CAUSED BY AN IMPROPER TORU SEAL GROOVE, AS IN PRIOR CASES HOSE WAS REPLACED WITH A -003.						
CORRECTIVE ACTION-ECP 1682 REPLACED SUBJECT HOSE WITH A -003 HAVING A PROPER TORU SEAL GROOVE.						
PROPULSION INTERFACE-A/B FUEL FEED	A-9B-06-110 SUSTAINER MANUAL PREVALVE SEAL	FAR 27-02250-1	38E 6R0119	ETR	YES	STRATOS NO
FAILURE MODE- INTERNAL LEAK. UNIT HAS REJECTED FOR LEAKAGE. EXAMINATION REVEALED MAIN SEAL WAS SPLIT INTO FOUR PIECES, TWO PIECES WEDGED BETWEEN THE BUTTERFLY AND HOUSING, AND 1 PIECE IN THE SEAL GROOVE. TEST INDICATED SEAL COULD BE DISPLACED FROM GROOVE BY PRESSURIZING SYS. DOWNSTREAM OF VALVE- SUCH AS RECEIVING FUEL TANK PRESS. TO THE MA IN FUEL TANK, WITH VALVE CLOSED IT- TALLY. UPON OPENING VALVE AERODYNAMIC FORCES DISPLACE SEAL. SUBSEQUENT VALVE CLOSING CUTS THE SEAL.						
CORRECTIVE ACTION-ECP 1981 COVERED REDESIGN OF VALVE TO PROVIDE MORE SPACE FOR SEAL EXPANSION WITHIN THE SEAL GLAND , AND BY LUBRICATING THE VALVE BODY WITH TEFLON.						
PROPULSION INTERFACE-A/B FUEL FEED	A-9B-06-102 PRE-VALVE, SUSTAINER FUEL	FAR 27-02100-5	SP 6R0111	EVR	YES	CONVAIR N/A
FAILURE MODE-LEAK-EXTERNAL-UNIT WAS REMOVED FOR FUEL LEAKAGE FROM THE RELEASE ASSMBLY BELLOWS. LEAKAGE CONFIRMED A HOSE WAS COMING FROM A PIN HOLE ADJACENT TO A SOLDER JOINT IN THE BELLOWS ASSEMBLY. THIS WAS THE RESULT OF CORROSION C USED BY COMPLETE REMOVAL OF ACID FLUX.						
CORRECTIVE ACTION-NPS REVISED 12-1-81 TO INCLUDE MORE DETAILED INSTRUCTIONS FOR SOLDERING AND FLUX REMOVAL.						

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GENERAL DYNAMICS
CONVAIR DIVISION

DIFFERENTIATION OF THE HUMAN BRAIN

SYSTEM SIC SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	CR-08-063 PREVALVE, FUEL, SUSTAINER	FAR 7-02281-15	612702	YES B.M. HADLEY	NO	099801
FAILURE MODE-LEAK-LEAKAGE PAST BUTTERFLY SEAL. FAILURE NOT CONFIRMED.						
CORRECTIVE ACTION-NONE						
PROPELLION INTERFACE-A/B FUEL FEED	CR-08-063 PREVALVE, FUEL, BOOSTER	FAR 7-02287-15	612702	YES B.M. HADLEY	NO	099801
FAILURE MODE-FAIL DURING OPERATING-VALVE REPORTED TO HAVE BOUND-UP DURING ACTUATION.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED.						
PROPELLION INTERFACE-A/B FUEL FEED	A-SH-08-100 PRE-VALVE, SUSTAINER FUEL, SEAL	FAR 87-02290-1	33E 611213	FAPB	YES STRATOS NO	099801
FAILURE MODE-LEAK-UNIT REMOVED FOR SEVERE INTERNAL LEAKAGE DURING CHECKOUT OF MISSILE. A 100 DEGREE SEGMENT OF THE BUTTERFLY SEAL HAD BEEN TORN AWAY.						
CORRECTIVE ACTION-ECP 1981 COVERED REDESIGN OF THE VALVE SEAL ARRANGEMENT AND WAS RELEASED 2-11-83.						
PROPELLION INTERFACE-A/B FUEL FEED	A-SF-08-096 PRE-VALVE, SUSTAINER FUEL	FAR 87-02290-1	34E 611110	FAPB	YES STRATOS NO	099801
FAILURE MODE-LEAK- UNIT REMOVED FOR INTERNAL LEAKAGE WHICH COULD NOT BE CONFIRMED DURING FAILURE ANALYSIS.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B FUEL FEED	98-08-094 VALVE, FUEL STAGING	FAR 87-022607	20E 611106	KTR	YES FLIGHT REFUEL NO LS	099801
FAILURE MODE-LEAK-EXTERNAL-UNIT REMOVED FOR EXTERNAL LEAKAGE DURING A FUEL TANKING OPERATION. LEAKAGE COULD NOT BE CONFIRMED DURING FAILURE ANALYSIS.						

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GENERAL MATHEMATICS
CONVAIN DIVISION

MIDDLE-AGE INFLUENCE ON MIGRATION DECISIONS

PROPELLION INTERFACE-A/B FUEL FEED	99-06-086 HOSE ASSEMBLY-SUSTAINER FUEL START 27-02163-3	FAR	611102	SD	YES STRATOFLX
SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE C/P	SITE TIME D/P	PRI OTH VENDOR PART NO
699367	699269				

FAILURE MODE-LEAN-EXTENDED-HOSE. REJECTED FOR EXTERNAL LEAKAGE AT THE END FITTING & NUT, DUE TO GALLING. EXAMINATION REVEALED SEVERE GALLING BETWEEN THE NUT AND HOSE END FITTING. FAILURE ATTRIBUTED TO SIMILAR HARDNESS OF MATERIAL OF THE TWO SURFACES. LACK OF LUBRICATION DUE TO CLEANING FOR FUEL SERVICE.

CONVENTIONAL ACTIVITIES - CONSIDERED AS HIGH DENSITY AND COMBINED ONLY TWO VEHICLES.

PROPELLION INTERFACE-A/B 86-06-066 PRE-VALVE, FUEL SUSTAINER FAR 27-21200-3 ST 611016 SYC. YES CONVAIR NO

Failure Mode-Leak-External-Valve Rejected Due to External Leakage at the Bellows. Examination revealed a pin hole adjacent to a weld point, and was caused by corrosion resulting from chemical action of residual acid flux.

...and REMOVED CONNECTIVE METHODS OF FELIX BENOY

PROPELLION INTERFACE-A/B
FUEL FEED
98-06-084
PREV AVE FUEL RELEASE ASSEMBLY, SU 27-21241-3
FIR
611005 ETR YES CONVAIR
NO

FAILURE MODE-STRUCTURAL-The assembly failed when the bellows protective housing pulled loose from the unit as the reaction force was applied. This was due to the release of the external snap ring which retained the housing to the release pin shaft. Elimination showed the snap ring groove width and bottom radius were not to snap ring manufacturers recommendations. The tapered hole, in the bellows housing at the contact area with the snap ring was also not to the recommendations.

CORRECTIVE ACTION-A CLO-É FITTING WASHER WAS ADDED BETWEEN THE SNAP RING AND THE CELLULOSE HOUSING. THIS ASSEMBLY IS

PROPELLION INTERFACE-A/B
BUTTERFLY TYPE-FUEL PREVALVE
AC-81-0086/82-504-A3-01
CAPTIVE
27-31200
SE
32/ASYC
YES 60/C
NO

FAILURE MODE-OUT OF TOLERANCE - THE U1, B2 AND P PREVALVES DID NOT OPEN WITHIN THE TOLERANCE PRESSURE OF 30 PLUS MINUTES.

GENERAL EFFECTS - 1

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GENERAL DYNAMICS

DIRECTIONS FOR USE OF MURINE-ALLOGENEIC

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DT DATE PART NUMBER	SITE DATE	PRI DIF TIME	OTH DIF	VENDOR NAME PART NO
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SCOTT S. LIEV AGILE SOFTWARE

PROPELLION INTERFACE-A/B
FUEL FLD 9A-06-081
STAGING VALVE BELLOWS -
BOATER FAR 87-21120-3
3CO 610224
EAFB YES
EAFB NO
000001

FAILURE MODE-LEAKAGE. UNIY REPLACED WHEN EXTERNAL LEAKAGE WAS NOTED PRIOR TO TANKING TEST. PRIOR TO FAILURE THE UNIT HAD UNDERGONE 71 PRESSURE CYCLES, 36 HIGH FLUORATE AND 5 LOW FLOW RATE TANKING TEST. VISUAL EXAMINATIONS REVEALED A ONE INCH CRACK IN THE SEVENTH CONVOLUTION BELOW THE STAGING SEAL. FAILURE WAS ATTRIBUTED TO METAL FATIGUE OF REFLUX LINE.

CORRECTIVE ACTION - NONE - UNIT PERFORMED IN EXCESS OF INTENDED LIFE CYCLE

PROPELLION INTERFACE-A/B
FUEL FEED
AB-61-001714-G11-S
SUSTAINER FUEL PREVALVE BUTTERFLY
CAPTIVE
1-4P
EDWARD'S YES
610622
T-598.80 M3
888347

SYSTEM EFFECT-OPERATION STARTS' LATE.
PRESSURE IS 38 PLUS MINUS 6 PSIG.

VEHICLE EFFECT - NONE.

CORRECTIVE ACTION-SUSTAINER FUEL PREVALVE WAS BROKEN BY INSPECTION.

PROPULSION INTERFACE-A/B
FUEL FEED
SA-10-26-060
PRT ALVE, FUEL BOOSTER
FAN
7-02867-15
81010
MTR
YES G.H. HACLEY
NO

VALVE FAILURE MODE-LEAKAGE: VALVE REMOVED DURING LEAK CHECK FOR INTERNAL LEAKAGE. LARGE AMOUNT OF CONTAMINATION AT THE WIPER RINGS AND SEAL. THE SEAL CONTAINED A COUPE BEHIND THE SEAL LIP ALLOWING FLOW OF FLUID PAST SEAL LIP.

CHEMOTACTIC ACTIVATION-EXTENSION MOTILITY AS A PROBLEM AND PERSPECTIVE TO IMPROVE THIS EC.

PROPELLION INTERFACE-A/B 9K-06-077
FUEL TANK ADAPTER, A/B, FUEL FILL AND DRAIN FAR
27-03198-3 \$10000 F/FB YES SOLAR AIRCRAFT
CO. NO

FAILURE MODE-LEAK-EXTERNAL-UNIT LEAKING FUEL FROM THE AREA OF THE RESISTANCE WELD "L" JOINT BETWEEN THE BODY AND ATTACHMENT PLATE. INVESTIGATION REVEALED ONE INCH ARC LEAKAGE. THIS WAS A WELD DISCONTINUITY CAUSED BY INSUFFICIENT PREPARATION OF THE WELDING PROCEDURE OR INADEQUATE CLEANING PRIOR TO WELDING. UNIT HAD EXPERIENCED FLOW FAIL AND DOWN TIME OPERATIONS.

GENERAL DYNAMICS
CONVAIR DIVISION

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DIFFICULTIES REV. EM-PROPULSION INTERFACE SYSTEM-AIRBORNE

TEST/REPORT NUMBER FILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE OFF	SITE TIME DIF	PRI OTN	VENDOR NAME VENDOR PART NO
8/18/01 SUB-SYSTEM					

OFFICERS AND PERSONNEL AS TO THE REQUIREMENTS OF

PROPELLION INTERFACE-A/B SF-05-078 FAIR
FUEL FEED VALVE, ORIFICE CHECK VERNIER FUEL 27-08402-3
YES PARKER AIRCRAFT 699271
NO T

Failure mode - External valve was replaced because of leakage during an AF demonstration of the NAS leak check procedure. Failure was not confirmed.

COOPERATIVE ACTION

PROPELLION INTERFACE-A/B
FUEL FEED AB-61-0014/14-610-1A
SUSTAINER FUEL PRE-VALVE BUTTERFLY CAPTIVE
489348

FATIGUE MODE-FAIL TO OPERATE AT PRESCRIBE TIME, SUSTAINER FUEL PREVALVE BEGAN OPENING AT STATIC PRESSURE, ABOVE THE MAXIMUM ALLOWABLE LIMIT OF 48 PSIG. SPECIFICATIONS CALL FOR 30 PLUS MINUS 6 PSIG.

REAL ESTATE INVESTMENT TRUSTS

PROPELLION INTERFACE-A/B AD-61-0014/14-610-44
FUEL FEED B2 FUEL PREVALVE BUTTERFLY
CAPTIVE 1-4F
61001 EDWARDS YES
T-36 NO

FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME, 82 FUEL PREVALVE OPENED AT 47.2 PMSI RATHER THAN AT ITS SPECIFIED OPENING PRESSURE OF 38 PLUS MINUS 6 PMSI.

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PROPELLION INTERFACE A/B 9G-0G-0G6
CORRECTIVE ACTION/VALVE WAS RECORDED BY INSPECTION

FAILURE MODE-INTERNAL LEAK- VALVE FAILED TO SEAT, ALLOWING INTERNAL LEAKAGE. O RING SEAL HAD BEEN DISPLACED. REMOVAL OF THE O RING CORRECTLY PROVIDED OPERATION WITHOUT LEAKAGE. REASON FOR O RING DISPLACEMENT COULD NOT BE DETERMINED.

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**GENERAL DYNAMICS
CONVAIR DIVISION**

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

GENERAL DYNAMICS
CONVAIR DIVISION

19 JUN 1968 DIFFICULTIES REVIEW- PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI O/RH	VENDOR NAME VENDOR PART NO
	K CHECKED TO DETERMINE IF ORIFICE IS PRESENT.					607641
PROPELLION INTERFACE-A/B FUEL FEED	9D-01-066 PRE-VALVE; FUEL BOOSTER	FAR 7-Q2207-1S	700 610003	EIR 610105	YES B.H. HADLEY NO	609320
	FAILURE MODE-FAILED DURING OPERATION-UNITS REPORTED TO EXHIBIT INTERMITTENT ABILITY TO CLOSE. TESTING FAILED TO CONFER PROBLEM. REPORTED PROBLEM COULD ONLY BE DUPLICATED WHEN ACTUATING PRESSURE LINE WAS RESTRICTED TO REDUCE PRESSURE BUILD-UP RATE TO LESS THAN 120 PSI PER SECOND. CAUSE OF PROBLEM UNKNOWN SINCE A PURGE BOX CHECK AT WTR SHOWED NO DISCREPANCY AND REPLACEMENT VALVES OPERATED PROPERLY.					
	CORRECTIVE ACTION-NONE- FAILURE NOT CONFIRMED.					
PROPELLION INTERFACE-A/B FUEL FEED	9D-04-066 BOOSTER FUEL PRE-VALVE.	FAR 7-Q2207-1S	780 610003	WTR 610105	YES B.H. HADLEY NO	609374
	FAILURE MODE-FAIL DURING OPERATION-UNIT EXHIBITS INTERMITTENT ABILITY TO CLOSE. PROBLEM COULD ONLY BE DUPLICATED WHEN ACTUATING PRESSURE LINE WAS RESTRICTED TO REDUCE PRESSURE BUILDUP RATE TO LESS THAN 240 PSI/SECOND. CAUSE UNKNOWN SINCE PURGE BOX CHECK AT WTR SHOWED NO DISCREPANCY, AND REPLACEMENT VALVES OPERATED PROPERLY.					
	CORRECTIVE ACTION-NONE- FAILURE NOT CONFIRMED.					
PROPELLION INTERFACE-A/B FUEL FEED	9A-06-059 BOOSTER SECTION OF STAGING VALVE	FAR 27-E1138	240 610105	EART 610105	YES NO	609404
	FAILURE MODE-STRUCTURAL- A CRACK DEVELOPED IN ONE OF THE BELLOWS CONVENTIONS AFTER FORTY ONE TANKING- DETANGLING OPERATIONS, AND THE REMOVAL OF THE PART THREE TIMES FOR O RING REPLACEMENT. THE UNIT WAS ALSO SUBJECTED TO SEVERE COCAING DUE TO ABNORMAL FORCES WHILE THE MISSILE TANK WAS VENTED DURING WELDING OPERATIONS WITH THE FUEL DUCT STILL PRESSURIZED TO SEQUENCE ONE.					
	CORRECTIVE ACTION-NONE- FAILURE WAS RESULT OF UNUSUAL ENVIRONMENTS EXPERIENCED IN THE PARTICULAR OPERATIONS INVOLVING 6-247.					
PROPELLION INTERFACE-A/B FUEL FEED	9B-01-060 PRE-VALVE; BOOSTER FUEL	FAR 7-Q2207	610105	O/P/UTT 7-Q2207	YES B.H. HADLEY NO	
	FAILURE MODE-OUT OF TOLERANCE- VALVE REPORTED FOR INABILITY TO CLOSE UNDER PRESSURE. THE ACTUATOR CLOSE PORT ORIFICE PLUG WAS NOT COMPLETELY SEATED, RESULTING IN BLOCKAGE OF THE CLOSE PASSAGE TO THE ACTUATOR. THE PORT THREADS WERE MACHINED TO THE REQUIRED DEPTH TO ALLOW THE ORIFICE PLUG TO CLEAR THE LOCKED GAS PASSAGE. ALLOWING THE ACTUATOR PISTON TO JAM ON THE LOCK MECHANISM BEFORE SUFFICIENT UNLOCKING PRESSURE COULD BE APPLIED.					

19 JUN 1986

GENERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE PART NUMBER	SITE DATE OF TIME	PFI OTW	VENDOR NAME VENDOR PART NO
699292						

CORRECTIVE ACTION-VENDOR AGREED TO REMOVE ALL VALVES HAVING THIS DISCREPANCY. THIS WAS ACCOMPLISHED IN FEB. 1981.

PROPELLION INTERFACE-A/B FUEL FEED	98-08-058 VALVE CHECK, VERNIER FUEL PURGE	FAR 87-02111-1	602001 ETR	YES SOUTHWESTERN V NO A. CORP	699291
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FAILURE MODE-INTERNAL LEAK. SEVEN VALVES REPORTED FOR INTERNAL LEAKAGE DUE TO INTERFERENCE BETWEEN POPPET SEAL RETAIMER SCREW AND THE VALVE SEAT.

CORRECTIVE ACTION- THE VENDOR HAS REDESIGNED THE VALVE TO PREVENT RECURRENCE OF THE ABOVE PROBLEM. ALL VALVES MANUFACTURED AFTER 10-1-80 INCORPORATED THIS CHANGE.

PROPELLION INTERFACE-A/B FUEL FEED	AC-87-004531-308-AA-03 B1 LOW PRESSURE FUEL DUCT	CAPTIVE 27-21103-905	901000 601028	SYC NO	699293
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FAILURE MODE-STRUCTURAL. TURBO PUMP VIBRATION RESULTED IN A WELD FAILURE ON THE B1 LOW PRESSURE FUEL DUCT, ALLOWING FUEL TO RUM ON TO THE GAS GENERATOR EXHAUST DUCT.

SYSTEM EFFECT-NONE. NO FIRE OR DAMAGE RESULTED FROM THE FUEL LEAK.

VEHICLE EFFECT-NONE. THIS CONDITION WAS DISCOVERED ON POST TEST INSPECTION.

CORRECTIVE ACTION-THE STRAIGHT LINE RIGID TUBE CONNECTED FROM BOSS TO TRANSDUCER WILL BE REPLACED WITH A LINE WITH BUILT-IN LOOP, TO REDUCE THE STRAIN AT THE BOSS.

PROPELLION INTERFACE-A/B FUEL FEED	ETR-022/14-921-52-3C FUEL/FILL/DRAIN/VALVE, MARS	CAPTIVE	602001 803	1-7/EDM YES NO	6991402
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FAILURE MODE-FAIL DURING OPERATION. THE WIRES TO PINS B AND C WERE FOUND TO BE BARE. CONTACT BETWEEN THESE TWO PINS COULD HAVE CAUSED THE FILL AND DRAIN VALVE TO CYCLE PARTIALLY OPEN DURING THE TEST WHICH CAUSED AN ABNORMAL DECREASE IN FUEL LEVEL WHICH IN TURN COMMANDED THE PU VALVE TO THE CLOSED CONTROL POSITION. THE PU VALVE WAS THEN RETURNED TO THE NOMINAL POSITION WITH THE BLOCKHOUSE OVERRIDE.

SYSTEM EFFECT-ERRATIC OPERATION.

VEHICLE EFFECT-NONE.

CORRECTIVE ACTION-UNKNOWN.

15 JUN 1986

**GENERAL DYNAMICS
CONVAIR DIVISION**

DIFFICULTIES REVIEW- PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	O/H VENDOR PART NO	VENDOR NAME
PROPELLION INTERFACE-A/B FUEL FEED	AC-80-0036/91-01-41-03 FUEL FILL AND DRAIN VALVE	CAPTIVE 27-02313-3	SE 600923	BYC NO	YES NO	6009008
	FALLURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. DURING THE COUNTDOWN, THE AIRBORNE FUEL FILL AND DRAIN VALVE FAILED IN THE CLOSED POSITION DURING VALVE CYCLING.					
	SYSTEM EFFECT-OPERATION STOPS PREMATURELY.					
	VEHICLE EFFECT-COUNTDOWN ABORTED AND RE-SCHEDULED.					
	CORRECTIVE ACTION-VALVE WAS REMOVED AND REPLACED.					
PROPELLION INTERFACE-A/B FUEL FEED	98-08-053 FUEL PRE-VALVE SWITCH, BOOSTER	FAR 7-02287-11	440 600706	ETR NO	YES B.H.HADLEY NO	6009002
	FALLURE MODE-FAILURE TO OPERATE AT PRESCRIBED TIME- DURING HANGER CHECKOUT THE VALVE FAILED TO GIVE AN ELECTRICAL OPEN INDICATION. INVESTIGATION REVEALED THE POSITION SWITCH WAS IMPROPERLY ADJUSTED. TORQUE PAINT WAS INTACT INDICATING THE ADJUSTMENT WAS MADE BY THE VENDOR. THE VALVE PROPERLY ACTUATED NORMALLY BUT WITHOUT PROPER INDICATION.					
	CORRECTIVE ACTION-THE ACCEPTANCE TEST PROCEDURE WAS REVISED TO REQUIRE TESTING FOR PROPER VALVE POSITION INDICATION					
PROPELLION INTERFACE-A/B FUEL FEED	98-08-049 QUICK DISCONNECT, RESIDUAL DRAIN	FAR 700-504	400 600219	ETR NO	YES WIGGINS NO	6009009
	FALLURE MODE-INTERNAL LEAK- REPORTED LEAKING PAST POPPET. LEAKAGE COULD NOT BE CONFIRMED DURING FAILURE ANALYSIS. WITH DUST CAPS INSTALLED. WHEN LEAK WAS REPORTED, DUST CAPS WERE NOT INSTALLED.					
	CORRECTIVE ACTION-NONE.					
PROPELLION INTERFACE-A/B FUEL FEED	98-08-049 QUICK DISCONNECT VALVE, RESIDUAL D 700-504 RAIN	FAR 600219	290 600219	ETR NO	YES WIGGINS NO	6009007
	FALLURE MODE-INTERNAL LEAK- THREE VALVES REPORTED LEAKING PAST POPPET. LEAKAGE COULD NOT BE CONFIRMED DURING FAILURE ANALYSIS. WITH DUST CAPS INSTALLED. WHEN LEAKAGE WAS REPORTED, DUST CAPS WERE NOT INSTALLED.					
	CORRECTIVE ACTION-NONE.					

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DIFFICULTIES REVIEW-MOXPABIN INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DI/F DATA SOURCE PART NUMBER	VEHICLE DATE DIP TIME	BITE DIP TIME	PRI OTH	VENDOR NAME VENDOR PART NO
PROPULSION INTERFACE-A/B FUEL FEED	98-06-04, QUICK DISCONNECT - RESIDUAL DRAIN T00-SP4	FAR COMPOSITE-FD0/0N PART NUMBER 000210	000210 000217	15/018 ETR	YES NO	WIGGINS NO 420
FAILURE MODE-INTERNAL LEAK- REPORTED LEAKING PAST POPPET. LEAKAGE COULD NOT BE CONFIRMED DURING FAILURE ANALYSIS WI TH DUST CAPS INSTALLED. WHEN LEAK WAS REPORTED, DUST CAPS WERE NOT INSTALLED.						
CORRECTIVE ACTION-MCNE.						
PROPULSION INTERFACE-A/B FUEL FEED	AIC-27-121/73-004-01-51 FUEL FILL AND DRAIN VALVE	COMPOSITE-FD0/0N PART NUMBER 000217	000210 000217	15/018 ETR	YES NO	
FAILURE MODE-LEAK EXTERNAL. DURING FUEL TANKING, A LEAK WAS FOUND AT THE LOWER PLANE OF THE FUEL FILL AND DRAIN VA LVE. LEAK WAS DUE TO A MISSING GASKET.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE GASKET WAS INSTALLED.						
PROPULSION INTERFACE-A/B FUEL FEED	ETR-001/14-302-C1-5E VERNIER SOLO FUEL TANK FILL LINE	CAPTIVE PART NUMBER 87-24503-11	000204 RD8	1-4/EDINA YES NO		
FAILURE MODE-LEAK- EXTERNAL. A LEAK WAS DISCOVERED IN THE FUEL FILL LINE TO THE VERNIER SOLO TANK.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-PRE-IGNITION PROPULSION CUTOFF. FUEL LEAKAGE INTO THE THRUST SECTION RESULTED IN A SMALL FLASH FIRE. CO SERVER INITIATED CUTOFF DUE TO HIGH THRUST SECTION TEMPERATURES. NO DAMAGE WAS SUSTAINED.						
CORRECTIVE ACTION-A UNION WAS REPLACED AND THE JOINT RETROGRADED.						
PROPULSION INTERFACE-A/B FUEL FEED	DAB5A1-4MO-02-10 FLOAT SWITCH	COMPOSITE-FD0/0P PART NUMBER 503108	970-A-1 NO			
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THE FLOAT SWITCH IN THE INERT FLUID FILL UNIT STUCK AND PREVENTE D A COMPLETE SIGNAL FROM BEING OBTAINED BY LAUNCH CONTROL.						
SYSTEM EFFECT-FAILURE TO OBTAIN IFF COMPLETE RESULTED IN CONTINUOUS LOG DONE PURGE. CONTINUOUS PURGES COULD DEPLET E THE GND SUPPLY RESULTING IN AN UNSAFE CONDITION FOR PROPELLANT DRAIN.						
VEHICLE EFFECT-COMPOSITE ABORTED AND RECHEDULED.						
CORRECTIVE ACTION-UNKNOW.						

GENERAL DYNAMICS
CONVAIR DIVISION

18 JUN 1988

DIFFICULTIES IN THE INTERFACE WITH A BOMB

SYSTEM SUB-SYSTEM		TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED		FTAG62/P3-4DH-01-43 FUEL PREVALVE-FORWARD FLANGE	COMPOSITE-FRDO/PPL	410	13/ETR	YES	591826 NO

FAILURE MODE-LEAK EXTERNAL. AFTER FUEL TANKING, A LEAK WAS DISCOVERED AT THE JOINT BETWEEN THE BOOSTER FUEL PREVALVE FORWARD FLANGE AND THE TANK APEX SKIN.

SYNTHETIC EFFECT - NONE.

VEHICLE EFFECT - NONE.

CORRECTIVE ACTION ATTEMPTED TO SEAL THE EXTERNAL AREA WITH EC129³ COMPOUND. A RECHECK DURING FUEL TANKING ON 4 JAM 60 SHOWED THE JOINT TO BE STILL LEAKING. THE AREA WAS AGAIN SEALED WITH EC129³ AND THE DECISION WAS MADE TO TANK FUE

FAILURE MODE-INTERNAL LEAKAGE, IN CHECK DIRECTION; NOTED WHEN VALVE WAS BEING INSTALLED. IT ON SEAT FOUND TO BE SALTED AND CONTAMINATED.

CORRECTIVE ACTION—THIS VENOUS VALVE IS NO LONGER USED BY CONVAIR. NEW VENOR IS JAMES POLE CLARK WHOSE VALVE HAS A

PROPELLION INTERFACE-A/B
FUEL FEED
CHECK VALVE SEAL, FUEL START TANK
FAR 7-025337-1
SD 591215
MTR 591215
YES LANAGAN
NO

FAILURE MODE-INTERNAL LEAK- LEAKAGE IN CHECK DIRECTION NOTED WHEN VALVE WAS BEING INSTALLED. TEFLOC SEAT FOUND TO BE FAULTY AND CONTAMINATED.

CORRECTIVE ACTION—THIS SPENDS A VALUE IN LOCAL MEMORY UNLESS BY CONVENTION, NEW VERSION IS MADE FROM CLONE WHICH VALUE HAS A DIFFERENT CONFIGURATION.

PROPELLION INTERFACE-A/B
FUEL FEED
FTAB450/P3-4BN-02-40
BOOSTER FUEL PRE-VALVE

FAILURE MODE-LEAK-EXTERNAL. FUEL LEAK NOTED AT THE MOUNTING PLATE OF THE BOOSTER FUEL PRE-VALVE TO THE MAIN FUEL TANK.

SYSTEM EFFECT-MONIC

VEHICLE EFFECTIVENESS

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**GENERAL DYNAMICS
CONVAIR DIVISION**

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRSCONE

GENERAL DYNAMICS
CONVAIR DIVISION

19 JUN 1968 DIFFICULTIES REVIEW-PROPELLION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME DIF OTH	SITE PRI	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	98-08-032 GASKET, A/B FUEL P AND Q VALVE TO FUEL DUCT	FAR ET-08387	980806 ETR	YES CONVAIR NO 1388-53887	000000
FAILURE MODE-INTERNAL LEAK. GASKET LEAKED FUEL DUE TO IMPROPERLY SPACED FLANGE BOLT HOLES.					
CORRECTIVE ACTION-ALL SUCH GASKETS REINSPECTED AND USE OF A POSITIONING JIG FOR PUNCHING HOLES IN GASKETS INITIATED					
PROPELLION INTERFACE-A/B FUEL FEED	98-08-032 FILL AND DRAIN VALVE GASKET	FAR 7-23237-65	980806 ETR	YES CONVAIR NO	000000
FAILURE MODE-INTERNAL LEAK-GASKET LEAKED FUEL DUE TO IMPROPERLY SPACED FLANGE BOLT HOLES ON AIRBORNE PORTION OF FIL L AND DRAIN VALVE.					
CORRECTIVE ACTION-ALL SUCH GASKETS REINSPECTED, AND USE OF A POSITIONING JIG FOR PUNCHING HOLES IN GASKETS INITIATE D.					
PROPELLION INTERFACE-A/B FUEL FEED	A2C-27-051/P3-04-00-03 A2C-27-071 FLIGHT FUEL STAGING VALVE	9D 980806	13/E7R 13B-7	YES NO	000000
FAILURE MODE-FAIL DURING OPERATION. A FUEL LEAK WHICH COMMENCED AT BOOSTER SECTION JETTISON CAUSED BY A FAILURE OF EITHER THE FUEL DUCT FLANGE, THE FUEL STAGING DISCONNECT VALVE, THE BELLOWS, OR THE WELD AT THE FLANGE BETWEEN THE P RE-VALVE AND THE FUEL STAGING DISCONNECT VALVE.					
SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY.					
VEHICLE EFFECT-LOSS OF VEHICLE INTEGRITY. DECREASED FUEL TANK PRESSURE; SUBSEQUENT INTERMEDIATE BULKHEAD REVERSAL, NO MISSILE EXPLOSION AT 159.34 SECONDS.					
CORRECTIVE ACTION-SINCE THE EXACT CAUSE OF FAILURE WAS NOT DETERMINED EXTENSIVE MODIFICATIONS WERE ACCOMPLISHED ON THE FUEL STAGING VALVE, THE FUEL OUTLET FLANGE, THE BOOSTER SEPARATION SYSTEM, THE JETTISON TRACK TUBE ASSEMBLY, AND THE LAUNCHER. SPECIAL INSTRUMENTATION WAS ALSO ADDED TO SUBSEQUENT MissILES TO ANALYZE THE CHARACTERISTICS OF THE S TAGING VALVE. FOR DETAILED ACCOUNT SEE FAILURE INVESTIGATION REPORT A2C-27-071.					
PROPELLION INTERFACE-A/B FUEL FEED	98-08-021 BOOSTER FUEL STAGING DISCONNECT/BO 7-02228-3 OFTER HALF	FAR	980806 ETR	YES REACTION MOTOR NO 8	000000
FAILURE MODE-LEAK. EXTERNAL. ALL PARTS FAILED IN BANE MODE. ALL FAILURES CONSISTED OF A CRACK IN ONE OF THE ATT FIN E CONVENTIONS OF THE BELLOWS, AND OCCURRED AFTER 3 TO 7 FUEL TANKING OPERATIONS.					

15 JUN 1986

GENERAL DYNAMICS
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIF TIME	PRI DIF OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-ABOVE PART REPLACED BY A REDESIGNED PART, P/N 27-21136-1.						660289
PROPELLION INTERFACE-A/B FUEL FEED	9B-06-027 BOOSTER FUEL STAGING DISCONNECT -A 7-02229-3 FT SECTION-	FAR 7-02229-3	TC 960102	ETR	YES REACTION MOTOR NO S	669704
FAILURE MODE-LEAK. BELLOWS SECTION WAS LEAKING FUEL FROM A CRACK IN THE NINTH CONVOLUTION FROM THE AFT END. FAILURE OCCURRED AFTER FOUR FUEL TANKING OPERATIONS AND REACHING STAGE THREE PRESSURE THREE TIMES. METAL FAILURE WAS A TENSILE TYPE FAILURE.						
CORRECTIVE ACTION-7-02229-3 REPLACED BY 27-21136.						
PROPELLION INTERFACE-A/B FUEL FEED	9B-06-027 BOOSTER STAGING DISCONNECT	FAR 7-02229-3	TC 960102	ETR	YES REACTION MOTOR NO S	669368
FAILURE MODE-EXTERNAL LEAK - BELLOWS SECTION WAS LEAKING FUEL FROM A CRACK IN THE NINTH CONVOLUTION FROM THE AFT END. FAILURE OCCURRED AFTER FOUR FUEL TANKING OPERATIONS AND REACHING STAGE THREE PRESSURE THREE TIMES. METAL FAILURE WAS A TENSILE TYPE FAILURE.						
CORRECTIVE ACTION-7-02229-3 REPLACED BY 27-21136.						
PROPELLION INTERFACE-A/B FUEL FEED	9A-06-023 FUEL PRE-VALVE, BOOSTER	FAR 7-02227-13	SC 960283	EAFB	YES B.H. HADLEY NO	669704
FAILURE MODE: FAILURE TO OPERATE AT PRESCRIBED TIME- VALVE COULD NOT BE MOVED FROM OPEN TO CLOSED POSITION. TESTS INDICATED THAT WITH THE FOUR WAY SELECTOR VALVE VENTED TO ATMOSPHERE, (RATHER THAN TO THE NORMAL 5 PSIG PURGE BOX PRESSURE), VALVE ACTUATOR PRESSURE BUILD UP TIME TO 180 PSIG, WAS REDUCED FROM 1.0 TO 0.1 SECONDS.						
CORRECTIVE ACTION-VENTING OF FOUR WAY VALVE, P/N 7-02229-3, TO ATMOSPHERE ACCOMPLISHED AT EAFB/HATS. AIR NOT AFFECTION SINCE PURGE BOXES ARE VENTED BY VIRTUE OF COVER DISTORTION.						
PROPELLION INTERFACE-A/B FUEL FEED	9A-06-023 FUEL PRE-VALVE, SUSTAINER	FAR 7-022261-15	SC 960283	EDWARDS	YES B.H. HADLEY NO	
FAILURE MODE-Failure to operate at prescribed time- valve could not be moved from open to closed position. Test indicated that with the four way selector valve vented to atmosphere, (rather than to normal 5 psig purge box pressure), valve actuator pressure buildup time to 180 psig was reduced from 1.0 to 0.1 seconds.						
CORRECTIVE ACTION-VENTING OF THE FOUR WAY VALVE, P/N 7-02229-3, TO ATMOSPHERE ACCOMPLISHED AT EAFB/HATS. AIR NOT AFFECTION						

19 JUN 1966

GENERAL DYNAMICS
CONVAIR DIVISION
DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE DIF TIME	PRI DIF OTH	VENDOR NAME VENDOR PART NO
CITED SINCE PURGE BOXES ARE VENTED BY VIRTUE OF COVER DISTORTION.						
PROPELLION INTERFACE-A/B FUEL FEED	ZC-T-519/PZ-301-00-03 FUEL DISCONNECT VALVE	FLIGHT	3C 580220	12/ETR 132.0	YES NO	694283
FAILURE MODE-LEAK-EXTERNAL. THE FUEL DISCONNECT VALVE HALFDUCTED AT STAGING. SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY. THE FAILURE OF THE VALVE CAUSED A RAPID FUEL LEAK.						
VEHICLE EFFECT-LOSS OF VEHICLE INTEGRITY. THE FUEL LEAK CAUSED FUEL TANK PRESSURE LOSS AND BULKHEAD REVERSAL AT APPROXIMATELY 160.2 SECONDS. FOLLOWED BY SELF DESTRUCTION OF THE VEHICLE.						
CORRECTIVE ACTION-THE VALVE WAS REDESIGNED AS FOLLOWS. 1) LARGE VENT HOLES WERE CUT IN THE POPPET FAIRING. 2) LOW FRICTION BEARINGS, A HARDKOTE SPRING TUBE, AND A CENTRAL CONTACT POINT BETWEEN POPPET AND PUSHER WERE ADDED. 3) MAJOR WELDS WERE CAREFULLY CONTROLLED. 4) FRICTION REDUCED BETWEEN MATING SURFACES. 5) FUEL OUTLET PLANGE REINFORCED. 6) MIDRIFT BOLTS IN POPPET SECTION DOUBLED IN NUMBER AND/OR STRENGTHENED. 7) NEW AFT HALF OF FUEL STAGING VALVE INSTALLED. 8) TWO FAIL SAFE BOLTS PER FITTING ADDED TO BOOSTER SEPARATION FITTING. 9) PROCEDURE CHANGED. TO INCLUDE TORQUEIN CHECKS, ALIGNMENT PROCEDURE, AND INSPECTION PROCEDURES.						
PROPELLION INTERFACE-A/B BOSS-1 INSTRUMENTATION FUEL FEED	PTA2542/P4-101-00-13	PNF	13A 58-0131	14/ETR NO	YES NO	693331
FAILURE MODE-LEAK-EXTERNAL. FUEL LEAKAGE AT PIN HOLE IN A HELD ON AN INSTRUMENTATION BOSS IN THE LR FUEL INLET DUCT INC.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-COUNTDOWN DELAYED. TOTAL HOLD TIME WAS FOUR HOURS TO INVESTIGATE THIS LEAK AND SEVERAL OTHER LEAKS.						
CORRECTIVE ACTION-NONE.						
PROPELLION INTERFACE-A/B FUEL FEED	FY44516/PZ-302-00-3 FUEL FUEL Y DUCT BELLOWS	COUNTDOWN	3C 581223	12/ETR NO	YES NO	693337
FAILURE MODE-LEAK (INTERNAL). A FUEL LEAK WAS FOUND IN BELLOWS ON TOP OF Y DUCT AT RML VALVE. THIS PROBLEM OCCURRED DURING X-1 DAY FUEL TANKING OPERATION.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-DETANKE FUEL, APPARENTLY CORRECTED LEAK, AND RETANKED FUEL ON X DAY.						

GENERAL DYNAMICS
CONVAIR DIVISION

19 JUN 1966 DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
PROPELLION INTERFACE-A/B FUEL FEED	ZC-7-210/P4-2BN-02-12 BULKHEAD FITTING	COMPOSITE-B FACT 56117	120 56117	14/ETR -22	YES NO	693639
FAILURE MODE-EXTERNAL LEAK. DURING FUEL TANKING, THE BULKHEAD FITTING LEADING INTO THE VERNIER BLEED ORIFICE BLOCK WAS FOUND TO BE TOO LONG.						
SYSTEM EFFECT-NONE. THE EXCESS LENGTH OF THE BULKHEAD FITTING PREVENTED THE O-RING FROM SEATING RESULTING IN A FUEL LEAK.						
VEHICLE EFFECT-NONE. THE FLIGHT ACCEPTANCE TEST (TEST NO. P4-2BN-03-12) WAS SUCCESSFULLY REURN ON 18 NOVEMBER 1966.						
CORRECTIVE ACTION-THE FITTING WAS SHORTENED TO CORRECT THE LEAK.						
PROPELLION INTERFACE-A/B FUEL FEED	EM-1028/ TEST 14-303-A2 FUEL PRE-VALVE SOLENOID, CAPTIVE IRCUITRY	360608 34	1-4/EDINA YES RDS NO	693007		
FAILURE MODE-ERRATIC OPERATION. DEACTIVATION OF SUSTAINER FUEL PRE VALVE OPEN MICROSWITCH AT 34 SECONDS. POST TEST INVESTIGATION REVEALED THAT AN INFERMITTENT OUTPUT TO THE SUSTAINER PRE VALVE SOLENOID FROM THE 28V CONTROL CIRCUIT CAUSED THE CLOSING SIDE TO PRESSURIZE. A CLOSING CONTROL PRESSURE OF 360 PSIG IS NECESSARY TO OVERRIDE THE MECHANICAL LOCK UNDER STATIC CONDITIONS.						
SYSTEM EFFECT-OPERATION STOPS TOO EARLY.						
VEHICLE EFFECT-PREMATURE PROPULSION SHUTDOWN. TEST WAS SCHEDULED FOR 40 SECONDS OF BOOSTER OPERATION, 100 SECONDS OF SUSTAINER OPERATION AND 103 SECONDS OF VERNIER OPERATION. ACTUAL OPERATION WAS 34 SECONDS.						
CORRECTIVE ACTION-UNKNOWN.						
PROPELLION INTERFACE-A/B FUEL FEED	PTA3044/PZ-103-00-10 FITTING-FLARE	COUNTDOWN 56328	16/ETR -22	YES NO	693477	
FAILURE MODE-LEAK-EXTERNAL. A LEAK DEVELOPED IN A FLARE FITTING IN THE V1 FUEL LINE UPSTREAM OF THE PROPELLANT VALVE E. THE LEAK OCCURRED AT START TANK PRESSURIZING.						
SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY. THE LEAK DEPLETED THE VERNIER FUEL START TANK BEFORE IGNITION.						
VEHICLE EFFECT-COUNTDOWN ABORTED. V1 DID NOT IGNITE, V2 AND THE APS SHUTDOWN EARLY DUE TO FUEL DEPLETION.						
CORRECTIVE ACTION-UNKNOWN.						
PROPELLION INTERFACE-A/B FUEL FEED	PTA2942/P4-101-00-13 BOSS-INSTRUMENTATION, SEAL	FPP 560131	13A 560131	14/ETR -22	YES NO	
FAILURE MODE-LEAK-EXTERNAL. FUEL LEAKAGE AT TWO BOSS DUCT INSTRUMENTATION BOSS TORQUEAL FITTINGS.						
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DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI DIF OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-NONE.						0603383
VEHICLE EFFECT-COUNTDOWN DELAYED. TOTAL HOLD TIME WAS FOUR HOURS TO FIX THESE LEAKS AND SEVERAL OTHERS.						
CORRECTIVE ACTION-ONE FITTING TIGHTENED UP SATISFACTORILY. THE OTHER BOSS TORQUEAL WAS REPLACED.						
PROPELLION INTERFACE-A/B FUEL FEED	FTAB1242/P4-101-00-15 BOSS-S-REINFORCED INSTRUMENTATION, SEAL	PRF 50131	14/ETR 50131	SA NO	YES NO	0603382
FALLURE MODE-LEAK-EXTERNAL. FUEL LEAKAGE AT TWO B2 FUEL DUCT INSTRUMENTATION BOSS "OROSEAL FITTINGS".						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-COUNTDOWN DELAYED. TOTAL HOLD TIME WAS FOUR HOURS TO FIX THESE LEAKS AND SEVERAL OTHER LEAKS.						
CORRECTIVE ACTION-ONE FITTING TIGHTENED AND ONE TORQUEAL FITTING REPLACED. BOTH STILL SHED SOME SLIGHT SEEPAGE BUT THE MISSILE WAS COMMITTED TO PRF IN THIS CONDITION. LEAKS DID NOT INCREASE IN MAGNITUDE DURING FIRING.						
PROPELLION INTERFACE-A/B FUEL FEED	EN-7511-1,111-SPA-05 V1 FUEL SENSING LINE B-MUT	CAPTIVE 510107	SA RDA	1-1/EDNA NO	YES NO	0603383
FALLURE MODE-LEAK-EXTERNAL-LOCIG V1 FUEL INLET SENSING LINE B-NUT.						
SYSTEM EFFECT-NONE. THE LOOSE B-NUT CAUSED A LEAK IN VICINITY OF VERNIER ENGINE NO.1.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-A HOLD WAS CALLED AND B-NUT WAS TIGHTEN. QUALITY CONTROL WAS INSTRUCTED TO TIGHTEN UP INSPECTION REQUIREMENTS.						
PROPELLION INTERFACE-A/B FUEL FEED	FTAB1261/P4-101-00-06 PREVALVE SH/FT SEAL	PRF 510320	6A 510320	14/ETR NO	YES NO	0603384
FALLURE MODE-INTERNAL LEAK. POST TEST INVESTIGATION REVEALED A LEAKING SHAFT SEAL ON THE FUEL PREVALVE.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PROPELLION INTERFACE-A/B FUEL FEED	FTAB126/P4-101-01-06 FLANGE SEAL	CCOUNTDOWN 510320	6A -1060	14/ETR NO	YES NO	0603385
FALLURE MODE-EXTERNAL LEAK. A LEAK AT THE B1 FUEL PUMP INLET PLATE. FLANGE BOLTS WERE TIGHTENED AND THE LEAK WAS REDUCED TO AN ACCEPTABLE LEVEL.						
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DIFFICULTIES REVIEW-PROPELLUTION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART #
SYSTEM EFFECT-NONE.						691628
VEHICLE EFFECT-COUNTDOWN DELAYED. 200 MINUTES OF HOLD FOR THIS AND OTHER LEAKS.						
CORRECTIVE ACTION-TIGHTEN FLAME BOLTS.						
PROPELLUTION INTERFACE-A/B FUEL FEED	ATPI-1-A3 FUEL FILL AND DRAIN VALVE	CAPTIVE 570009	SA RDS	1-1/EDMA YES NO		695954
FAILURE MODE-LEAK-DURING AN ATTEMPT TO TANK FUEL AT A FLOW RATE OF 300 GPM THE FUEL FILL AND DRAIN VALVE SEPARATED BY ONE-. FOURTH TO ONE-HALF INCHES.						
SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY-THIS SEPARATION CAUSED A LEAK AND FUEL SPRAYED OVER THE ENGINES AND TEST STAND.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-TANKING RATE WAS DECREASED FROM 300 GPM TO 250 GPM.						
PROPELLUTION INTERFACE-A/B FUEL FEED	EN-557/1A-106-D4-02 B1TURBINEINLETDUCT,PLUG	CAPTIVE 570726	2A D3 5-1	1A/EDMA YES YES		697243
FAILURE MODE-LEAK EXTERNAL. A ONE-QUARTER INCH PLUG WAS MISSING FROM B-1 TURBINE INLET DUCT INSTRUMENTATION BOSS PERMITTING GAS GENERATOR EXHAUST GAS TO BLOW INTO THE THRUST SECTION.						
SYSTEM EFFECT-LOSS OF STRUCTURAL INTEGRITY CREATING A FUEL RICH EXPLOSION ATMOSPHERE RESULTING IN SUBSEQUENT EXPLOSION 1 CM 0.15 SEC AFTER CUTOFF. MINOR DAMAGE TO THRUST SECTION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
PROPELLUTION INTERFACE-A/B FUEL FEED	EN-557/1A-106-D4-002 B1FUEL PUMP INLET DUCT,DUCT	CAPTIVE 570726	2A D3 5-1	1A/EDMA YES YES		697244
FAILURE MODE-LEAK EXTERNAL. FUEL LEAK IN A PLUG IN THE B1 FUEL PUMP INLET DUCT DURING MAINSTAGE COMBUSTION. POST-TEST BIT CHECKS INDICATED FUEL LEAKAGE AT PLUG WITH DUCT PREBURINZED TO 6 PSI.						
SYSTEM EFFECT-LOSS OF STRUCTURAL INTEGRITY CREATING A FUEL RICH EXPLOSION ATMOSPHERE AND SUBSEQUENT EXPLOSION 1.15 SEC AFTER CUTOFF. MINOR DAMAGE TO THRUST SECTION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						

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DIFFICULTIES REVIEW-PROPULSION INTERFACE SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	BIF DATA SOURCE PART NUMBER	VEHICLE DATE BIF	SITE TIME BIF	PAI ORW VENDOR PART NO